Table of Contents

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended March 31, 2014

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____

Commission file number 000-30171

SANGAMO BIOSCIENCES, INC.
(exact name of registrant as specified in its charter)

Delaware	**68-0359556**
(State or other jurisdiction of incorporation or organization)	**(IRS Employer Identification No.)**

501 Canal Blvd
Richmond, California 94804
(Address of principal executive offices)

(510) 970-6000
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by section 13 or 15(d) of the Securities Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐	Accelerated filer ☒
Non-accelerated filer ☐ (Do not check if a smaller reporting company)	Smaller reporting company ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of April 30, 2014, 67,959,769 shares of the issuer's common stock, par value $0.01 per share, were outstanding.

Table of Contents

INDEX

SANGAMO BIOSCIENCES, INC.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Some statements contained in this report are forward-looking with respect to our operations, research, development and commercialization activities, clinical trials, operating results and financial condition. These statements involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- our strategy;
- product development and commercialization of our products;
- clinical trials;
- partnering;
- revenues from existing and new collaborations;
- our research and development and other expenses;
- sufficiency of our cash resources;
- our operational and legal risks; and
- our plans, objectives, expectations and intentions and any other statements that are not historical facts.

In some cases, you can identify forward-looking statements by terms such as: "anticipates," "believes," "continues," "could," "estimates," "expects," "intends," "may," "plans," "seeks," "should" and "will." These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Many of these risks are discussed in greater detail under the headings "Risk Factors" and "Management's Discussion and Analysis of Financial Conditions and Results of Operations" in this Form 10-Q. Sangamo undertakes no obligation to publicly release any revisions to forward-looking statements to reflect events or circumstances arising after the date of this report. Readers are cautioned not to place undue reliance on the forward-looking statements, which speak only as of the date of this Quarterly Report on Form 10-Q.

ZFP Therapeutic® is a registered trademark of Sangamo BioSciences, Inc.

Table of Contents

PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

SANGAMO BIOSCIENCES, INC.

CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited; in thousands, except share and per share amounts)

	March 31, 2014	December 31, 2013
Assets		
Current assets:		
Cash and cash equivalents	$ 126,823	$ 10,186
Marketable securities	86,607	82,627
Interest receivable	383	338
Accounts receivable	5,360	3,155
Prepaid expenses	370	457
Restricted cash	320	320
Other current assets	349	191
Total current assets	220,212	97,274
Marketable securities, non-current	30,384	38,663
Property and equipment, net	1,410	1,406
Intangible assets, in-process research and development	1,870	1,870
Goodwill	1,585	1,585
Other assets	39	40
Total assets	$ 255,500	$ 140,838
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable and accrued liabilities	$ 6,112	$ 4,380
Accrued compensation and employee benefits	1,471	3,194
Escrow liability	275	275
Deferred revenues	8,548	2,282
Total current liabilities	16,406	10,131
Deferred revenues, non-current	19,301	6,679
Contingent consideration liability	1,620	1,570
Deferred tax liability	748	748
Total liabilities	$ 38,075	19,128
Commitments and contingencies		
Stockholders' equity:		
Common stock, $0.01 par value; 80,000,000 shares authorized, 67,822,302 and 62,243,892 shares issued and outstanding at March 31, 2014 and December 31, 2013, respectively	$ 678	622
Additional paid-in capital	526,431	423,209
Accumulated deficit	(309,705)	(302,133)
Accumulated other comprehensive income	21	12
Total stockholders' equity	217,425	121,710
Total liabilities and stockholders' equity	$ 255,500	$ 140,838

See accompanying notes.

SANGAMO BIOSCIENCES, INC.

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited; in thousands, except per share amounts)

	Three months ended March 31,	
	2014	2013
Revenues:		
Collaboration agreements	$ 7,568	$ 4,083
Research grants	548	540
Total revenues	8,116	4,623
Operating expenses:		
Research and development	12,033	8,220
General and administrative	3,644	3,308
Change in fair value of contingent liability	50	—
Total operating expenses	15,727	11,528
Loss from operations	(7,611)	(6,905)
Interest and other income, net	39	20
Net loss	$ (7,572)	$ (6,885)
Basic and diluted net loss per share	$ (0.12)	$ (0.13)
Shares used in computing basic and diluted net loss per share	63,199	53,377

See accompanying notes.

SANGAMO BIOSCIENCES, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(Unaudited; in thousands)

	Three months ended March 31,	
	2014	**2013**
Net loss	$(7,572)	$(6,885)
Changes in unrealized gain / (loss) on available-for-sale securities	9	(1)
Comprehensive loss	$(7,563)	$(6,886)

See accompanying notes.

Table of Contents

SANGAMO BIOSCIENCES, INC.

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited: in thousands)

	Three months ended March 31,	
	2014	2013
Operating Activities:		
Net loss	$ (7,572)	$ (6,885)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	123	147
Amortization of premium / discount on marketable securities	295	231
Stock-based compensation	1,907	1,329
Change in fair value of contingent consideration liability	50	—
Net changes in operating assets and liabilities:		
Interest receivable	(45)	(68)
Accounts receivable	(2,205)	546
Prepaid expenses and other assets	(71)	61
Accounts payable and accrued liabilities	1,732	(1,480)
Accrued compensation and employee benefits	(1,723)	(1,339)
Deferred revenues	18,888	(560)
Net cash provided by / (used in) operating activities	11,379	(8,018)
Investing Activities:		
Purchases of marketable securities	(16,773)	(16,573)
Maturities of marketable securities	20,786	12,910
Purchases of property and equipment	(126)	(68)
Net cash provided by / (used in) investing activities	3,887	(3,731)
Financing Activities:		
Proceeds from public offering of common stock, net of issuance costs	93,786	—
Proceeds from exercise of stock options	7,585	2,247
Net cash provided by financing activities	101,371	2,247
Net increase / (decrease) in cash and cash equivalents	116,637	(9,502)
Cash and cash equivalents, beginning of period	10,186	21,679
Cash and cash equivalents, end of period	$126,823	$ 12,177

See accompanying notes.

SANGAMO BIOSCIENCES, INC.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
March 31, 2014
(Unaudited)

NOTE 1—BASIS OF PRESENTATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The accompanying unaudited condensed consolidated financial statements of Sangamo BioSciences, Inc. ("Sangamo" or the "Company") have been prepared in accordance with U.S. generally accepted accounting principles for interim financial information and pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC"). Accordingly, they do not include all of the information and footnotes required by generally accepted accounting principles for complete financial statements. In the opinion of management, all adjustments (consisting of normal recurring adjustments) considered necessary for a fair presentation have been included. Operating results for the three months ended March 31, 2014 are not necessarily indicative of the results that may be expected for the year ending December 31, 2014. The condensed consolidated balance sheet data at December 31, 2013 were derived from the audited consolidated financial statements included in Sangamo's Form 10-K for the year ended December 31, 2013, as filed with the SEC. These financial statements should be read in conjunction with the financial statements and footnotes thereto for the year ended December 31, 2013, included in Sangamo's Form 10-K, as filed with the SEC.

Use of Estimates and Classifications

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the financial statements and the accompanying notes. On an ongoing basis, management evaluates its estimates, including critical accounting policies or estimates related to revenue recognition, clinical trial accruals, fair value measurements, business combinations including the fair value of the contingent consideration liability for payments to former Ceregene Inc. (Ceregene) stockholders and intangible assets related to the acquisition of Ceregene, and stock-based compensation. Estimates are based on historical experience and on various other market specific and other relevant assumptions that the Company believes to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results could differ from those estimates.

Revenue Recognition

Revenues from research activities made under strategic partnering agreements and collaborations are recognized as the services are provided when there is persuasive evidence that an arrangement exists, delivery has occurred, the price is fixed or determinable, and collectability is reasonably assured. Revenue generated from research and licensing agreements typically includes upfront signing or license fees, cost reimbursements, research services, minimum sublicense fees, milestone payments and royalties on future licensee's product sales.

Multiple Element Arrangements prior to the adoption of ASU No. 2009-13, Revenue Recognition—Multiple Deliverable Revenue Arrangements (ASU 2009-13). For revenue arrangements entered into before January 1, 2011, that include multiple deliverables, the elements of such agreement were divided into separate units of accounting if the deliverables met certain criteria, including whether the fair value of the delivered items could be determined and whether there was evidence of fair value of the undelivered items. In addition, the consideration was allocated among the separate units of accounting based on their fair values, and the applicable revenue recognition criteria are considered separately for each of the separate units of accounting. Prior to the adoption of ASU 2009-13, the Company recognized nonrefundable signing, license or non-exclusive option fees as revenue when rights to use the intellectual property related to the license were delivered and over the period of performance obligations if the Company had continuing performance obligations. The Company estimated the performance period at the inception of the arrangement and reevaluated it each reporting period. Changes to these estimates were recorded on a prospective basis.

Multiple Element Arrangements after the adoption of ASU 2009-13. ASU 2009-13 amended the accounting standards for certain multiple element revenue arrangements to:

- provide updated guidance on whether multiple elements exist, how the elements in an arrangement should be separated, and how the arrangement consideration should be allocated to the separate elements;
- require an entity to allocate arrangement consideration to each element based on a selling price hierarchy where the selling price for an element is based on vendor-specific objective evidence ("VSOE"), if available; third-party evidence ("TPE"), if available and VSOE is not available; or the best estimate of selling price ("ESP"), if neither VSOE nor TPE is available; and

- eliminate the use of the residual method and require an entity to allocate arrangement consideration using the relative selling price method.

For revenue agreements with multiple element arrangements, such as license and development agreements, entered into on or after January 1, 2011, the Company allocates revenue to each non-contingent element based on the relative selling price of each element. When applying the relative selling price method, the Company determines the selling price for each deliverable using VSOE of selling price or TPE of selling price. If neither exists, the Company uses ESP for that deliverable. Revenue allocated is then recognized when the basic four revenue recognition criteria are met for each element. The collaboration and license agreements entered into with Shire International GmbH, formerly Shire AG (Shire), in January 2012 and Biogen Idec Inc. (Biogen) in January 2014 were evaluated under these amended accounting standards.

Additionally, the Company may be entitled to receive certain milestone payments which are contingent upon reaching specified objectives. These milestone payments are recognized as revenue in full upon achievement of the milestone if there is substantive uncertainty at the date the arrangement is entered into that objectives will be achieved and if the achievement is based on the Company's performance.

Minimum annual sublicense fees are also recognized as revenue in the period in which such fees are due. Royalty revenues are generally recognized when earned and collectability of the related royalty payment is reasonably assured. The Company recognizes cost reimbursement revenue under collaborative agreements as the related research and development costs for services are rendered. Deferred revenue represents the portion of research or license payments received which have not been earned.

Sangamo's research grants are typically multi-year agreements and provide for the reimbursement of qualified expenses for research and development as defined under the terms of the grant agreement. Revenue under grant agreements is recognized when the related qualified research expenses are incurred.

NOTE 2—FAIR VALUE MEASUREMENT

The Company measures certain financial assets at fair value on a recurring basis, including cash equivalents, available-for sale-securities and contingent consideration liability. The fair value of these assets was determined based on a three-tier hierarchy under the authoritative guidance for fair value measurements and disclosures that prioritizes the inputs used in measuring fair value as follows:

Level 1: Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities;

Level 2: Quoted prices in markets that are not active or inputs which are observable, either directly or indirectly, for substantially the full term of the asset or liability;

Level 3: Prices or valuation techniques that require inputs that are both significant to the fair value measurement and unobservable (i.e., supported by little or no market activity).

The Company generally classifies its available-for-sale debt instruments as Level 2. Instruments can be classified as Level 2 when observable market prices for identical securities that are traded in less active markets are used. When observable market prices for identical securities are not available, such instruments are priced using benchmark curves, benchmarking of like securities, sector groupings, and matrix pricing, as well as model processes. These models are proprietary to the pricing providers or brokers. These valuation models incorporate a number of inputs, including, listed in approximate order of priority: benchmark yields, reported trades, broker/dealer quotes, issuer spreads, two-sided markets, benchmark securities, bids, offers and reference data including market research publications. For certain security types, additional inputs may be used, or some of the standard inputs may not be applicable. Evaluators may prioritize inputs differently on any given day for any security based on market conditions, and not all inputs listed are available for use in the evaluation process for each security evaluation on any given day.

The fair value measurements of our cash equivalents, available-for-sale marketable securities and contingent consideration liability are identified at the following levels within the fair value hierarchy (in thousands):

	March 31, 2014 Fair Value Measurements			
	Total	Level 1	Level 2	Level 3
Assets:				
Cash equivalents:				
Money market funds	$ 7,234	$7,234	$ —	$ —
U.S. government sponsored entity debt securities	116,991	—	116,991	—
Total	124,225	7,234	116,991	—
Liabilities:				
Contingent consideration liability	$ 1,620	$ —	$ —	$1,620
Total	1,620	—	—	1,620

	December 31, 2013 Fair Value Measurements			
	Total	Level 1	Level 2	Level 3
Assets:				
Cash equivalents:				
Money market funds	$ 6,934	$6,934	$ —	$ —
U.S. government sponsored entity debt securities	121,290	—	121,290	—
Total	128,224	6,934	121,290	—
Liabilities:				
Contingent consideration liability	$ 1,570	$ —	$ —	$1,570
Total	1,570	—	—	1,570

Contingent Consideration Liability

On October 1, 2013 the Company acquired Ceregene and recorded a liability for the estimated fair value of contingent consideration payments to former Ceregene stockholders, as outlined under the terms of the merger agreement with Ceregene. These contingent payments are owed if the Company grants a third-party license to develop and commercialize certain product candidates acquired from Ceregene, or if the Company commercializes any of such product candidates itself. The fair values of these Level 3 liabilities are estimated using a probability-weighted discounted cash flow analysis. Such valuations require significant estimates and assumptions including but not limited to: determining the timing and estimated costs to complete the in-process projects, projecting regulatory approvals, estimating future cash flows and developing appropriate discount rates.

Subsequent changes in the fair value of these contingent consideration liabilities are recorded to the “Change in fair value of contingent liability” expense line item in the Condensed Consolidated Statements of Operations as operating expenses. During the three months ended March 31, 2014, the recognized amount of the liability for contingent consideration increased by $0.1 million primarily as the result of the passage of time.

Fair value as of December 31, 2013	$ 1,570
Change in fair value	50
Fair value as of March 31, 2014	$ 1,620

NOTE 3—MARKETABLE SECURITIES

Sangamo classifies its marketable securities as available-for-sale and records its investments at fair value. Available-for-sale securities are carried at estimated fair value based on quoted market prices, with the unrealized holding gains and losses included in accumulated other comprehensive income. Marketable securities that have maturities beyond one year as of the end of the reporting period are classified as non-current. The Company’s investments are subject to a periodic impairment review, and the Company recognizes an impairment charge when a decline in the fair value of its investments below the cost basis is judged to be other-than-temporary. The Company considers various factors in determining whether to recognize an impairment charge, including the length of time and extent to which the fair value has been less than the Company’s cost basis, the financial condition and near-term prospects of the investee, and the Company’s intent and ability to hold the investment for a period of time sufficient to allow for any anticipated recovery in the market value.

The table below summarizes the Company's available-for-sale securities (in thousands):

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized (Losses)	Estimated Fair Value
March 31, 2014				
Cash equivalents:				
Money market funds	$ 7,234	$ —	$ —	$ 7,234
Total	7,234	—	—	7,234
Available-for-sale securities:				
U.S. government sponsored entity debt securities	116,970	21	—	116,991
Total cash equivalents and available-for-sale securities	$124,204	$ 21	$ —	$124,225
December 31, 2013				
Cash equivalents:				
Money market funds	6,934	—	—	6,934
Total	6,934	—	—	6,934
Available-for-sale securities:				
U.S. government sponsored entity debt securities	121,278	12	—	121,290
Total cash equivalents and available-for-sale securities	$128,212	$ 12	$ —	$128,224

As of March 31, 2014, none of the available-for-sale securities held by the Company had material unrealized losses and there were no realized losses for the three months ended March 31, 2014. The Company had no other-than-temporary impairments of available-for-sale securities for the three months ended March 31, 2014 or the twelve months ended December 31, 2013.

NOTE 4—BASIC AND DILUTED NET LOSS PER SHARE

Basic net loss per share has been computed by dividing the net loss by the weighted-average number of shares of common stock outstanding during the period. Diluted net loss per share is calculated by dividing net loss by the weighted average number of shares of common stock and potential dilutive securities outstanding during the period.

Because Sangamo is in a net loss position, diluted net loss per share excludes the effects of common stock equivalents consisting of stock options, which are anti-dilutive. The total stock options outstanding excluded from consideration in the calculation of diluted net loss per share for the three months ended March 31, 2014 and 2013 were 7,302,366 and 8,661,061, respectively.

NOTE 5—MAJOR CUSTOMERS, PARTNERSHIPS AND STRATEGIC ALLIANCES

Collaboration Agreements

Collaboration and License Agreement with Biogen Idec Inc. in Human Therapeutics

On January 8, 2014, Sangamo entered into a Global Research, Development and Commercialization Collaboration and License Agreement (the Agreement) with Biogen, pursuant to which Sangamo and Biogen will collaborate to discover, develop, seek regulatory approval for and commercialize therapeutics based on Sangamo's zinc finger DNA-binding protein (ZFP) technology for hemoglobinopathies, including beta-thalassemia and sickle cell disease (SCD).

Under the Agreement, Sangamo and Biogen will jointly conduct two research programs: the beta-thalassemia program and the SCD program. For the beta-thalassemia program, Sangamo is responsible for all discovery, research and development activities through the first human clinical trial for the first ZFP Therapeutic developed under the Agreement for the treatment of beta-thalassemia. For the SCD program, both parties are responsible for research and development activities through the submission of an Investigational New Drug (IND) application for ZFP Therapeutics intended to treat SCD. For both programs, Biogen is responsible for subsequent world-wide clinical development, manufacturing and commercialization of licensed products developed under the Agreement. At the end of specified research terms for each program or under certain specified circumstances, Biogen retains the right to step in and take over any remaining activities of Sangamo. Furthermore, Sangamo has an option to co-promote in the United States any licensed product to treat beta-thalassemia and SCD developed under the Agreement, and Biogen agrees to compensate Sangamo for such co-promotion activities.

Sangamo received an upfront license fee of $20.0 million. Biogen will reimburse Sangamo for its costs incurred in connection with research and development activities conducted by Sangamo. In addition, Sangamo is eligible to receive development milestone payments upon the achievement of specified regulatory, clinical development, commercialization and sales milestones. The total amount of potential regulatory, clinical development, commercialization and sales milestone payments, assuming the achievement of all specified milestones in the Agreement, is $293.8 million, including Phase 1 milestone payments of $7.5 million for each of the beta-thalassemia and SCD programs. In addition, if products are commercialized under this Agreement, Biogen will pay Sangamo incremental royalties for each licensed product that are a tiered double-digit percentage of annual net sales of such product. There have been no licensed products approved under the agreement as of March 31, 2014.

All contingent payments under the Agreement, when earned, will be non-refundable and non-creditable. The Company has evaluated the contingent payments under the Agreement with Biogen based on the authoritative guidance for research and development milestones and determined that certain of these payments meet the definition of a milestone and that all such milestones are evaluated to determine if they are considered substantive milestones. Milestones are considered substantive if they are related to events (i) that can be achieved based in whole or in part on either the Company's performance or on the occurrence of a specific outcome resulting from the Company's performance, (ii) for which there was substantive uncertainty at the date the agreement was entered into that the event would be achieved and (iii) that would result in additional payments being due to the Company. Accordingly, consideration received for the achievement of milestones that are determined to be substantive will be recognized in as revenue its entirety in the period when the milestone is achieved and collectability is reasonably assured. Revenue for the achievement of milestones that are not substantive will be recognized over the remaining period of the Agreement, assuming all other applicable revenue recognition criteria have been met.

Subject to the terms of the Agreement, Sangamo grants Biogen an exclusive, royalty-bearing license, with the right to grant sublicenses, to use certain ZFP and other technology controlled by Sangamo for the purpose of researching, developing, manufacturing and commercializing licensed products developed under the Agreement. Sangamo also grants Biogen a non-exclusive, world-wide, royalty free, fully paid license, with the right to grant sublicenses, of Sangamo's interest in certain other intellectual property developed pursuant to the Agreement.

The Company has identified the deliverables within the arrangement as a license to the technology and on-going research services activities. The Company has concluded that the license is not a separate unit of accounting as it does not have stand-alone value to Biogen apart from the research services to be performed pursuant to the Agreement. As a result, the Company will recognize revenue from the upfront payment on a straight-line basis over a forty-month initial research term during which the Company will perform research services. As of March 31, 2014, the Company has deferred revenue of $19.3 million related to this Agreement.

Revenues recognized under the agreement with Biogen for the three months ended March 31, 2014 are as follows (in thousands):

	Three months ended March 31, 2014
Revenue related to Biogen Collaboration:	
Recognition of upfront fee	$ 660
Research services	423
Total	$ 1,083

Collaboration and License Agreement with Shire International GmbH in Human Therapeutics and Diagnostics

In January 2012, the Company entered into a collaboration and license agreement (the Agreement) with Shire International GmbH, formerly Shire AG, (Shire), pursuant to which the Company and Shire collaborate to research, develop and commercialize human therapeutics and diagnostics for monogenic diseases based on Sangamo's novel ZFP technology. Under the Agreement, the Company and Shire may develop potential human therapeutic or diagnostic products for seven gene targets. The initial four gene targets selected were blood clotting Factors VII, VIII, IX and X, and products developed for such initial gene targets will be used for treating or diagnosing hemophilia. In June 2012, Shire selected a fifth gene target for the development of a ZFP Therapeutic for

Huntington's disease. Shire has the right, subject to certain limitations, to designate two additional gene targets. Pursuant to the Agreement, the Company granted Shire an exclusive, world-wide, royalty-bearing license, with the right to grant sublicenses, to use Sangamo's ZFP technology for the purpose of developing and commercializing human therapeutic and diagnostic products for the gene targets. The initial research term of the Agreement is six years and is subject to extensions upon mutual agreement and under other specified circumstances.

Under the terms of the Agreement, the Company is responsible for all research activities through the submission of an IND or European Clinical Trial Application (CTA), while Shire is responsible for clinical development and commercialization of products generated from the research program from and after the acceptance of an IND or CTA for the product. Shire reimburses Sangamo for its internal and external research program-related costs.

The Company received an upfront license fee of $13.0 million. The Company will also be eligible to receive up to $213.5 million of contingent payments for each gene target if specified research, regulatory, clinical development, commercialization and sales milestone events occur, including payments for each gene target through the acceptance of an IND or CTA submission totaling $8.5 million. The Company will also be eligible to receive royalty payments that are a tiered double-digit percentage of net sales of licensed product sold by Shire or its sublicensees developed under the collaboration, if any. To date, no products have been approved and therefore no royalty fees have been earned under the Agreement with Shire.

All contingent payments under the Agreement, when earned, will be non-refundable and non-creditable. The Company has evaluated the contingent payments under the Agreement with Shire based on the authoritative guidance for research and development milestones and determined that certain of these payments meet the definition of a milestone and that all such milestones are evaluated to determine if they are considered substantive milestones. Milestones are considered substantive if they are related to events (i) that can be achieved based in whole or in part on either the Company's performance or on the occurrence of a specific outcome resulting from the Company's performance, (ii) for which there was substantive uncertainty at the date the agreement was entered into that the event would be achieved and (iii) that would result in additional payments being due to the Company. Accordingly, revenue for the achievement of milestones that are determined to be substantive will be recognized in its entirety in the period when the milestone is achieved and collectability is reasonably assured. Revenue for the achievement of milestones that are not substantive will be recognized over the remaining period of the Agreement, assuming all other applicable revenue recognition criteria have been met.

The Company has identified the deliverables within the arrangement as a license to the technology and on-going research services activities. The Company has concluded that the license is not a separate unit of accounting as it does not have stand-alone value to Shire apart from the research services to be performed pursuant to the Agreement. As a result, the Company will recognize revenue from the upfront payment on a straight-line basis over a six-year initial research term during which the Company will perform research services. As of March 31, 2014, the Company has deferred revenue of $8.4 million related to this Agreement.

Revenues recognized under the agreement with Shire for the three ended March 31, 2014 and 2013, were as follows (in thousands):

	Three months ended March 31,	
	2014	2013
Revenue related to Shire Collaboration:		
Recognition of upfront fee	$ 542	$ 542
Research services	4,979	3,214
Total	$ 5,521	$ 3,756

Related costs and expenses incurred under the Shire agreement were $4.8 million and $3.1 million during the three months ended March 31, 2014 and March 31, 2013, respectively.

Agreement with Sigma-Aldrich Corporation in Laboratory Research Reagents, Transgenic Animal and Commercial Protein Production Cell-line Engineering

In July 2007, Sangamo entered into a license agreement (the Agreement) with Sigma-Aldrich Corporation (Sigma). Under the Agreement, Sangamo agreed to provide Sigma with access to its proprietary ZFP technology and the exclusive right to use the technology to develop and commercialize research reagent products and services in the research field, excluding certain agricultural research uses that Sangamo previously licensed to Dow AgroSciences LLC (DAS). Under the Agreement, Sangamo and Sigma agreed to conduct a three-year research program to develop laboratory research reagents using Sangamo's ZFP technology during which time Sangamo agreed to assist Sigma in connection with its efforts to market and sell services employing the Company's ZFP technology in the research field. Sangamo has transferred its ZFP manufacturing technology to Sigma.

In October 2009, Sangamo expanded its Agreement with Sigma. In addition to the original terms of the Agreement, Sigma received exclusive rights to develop and distribute ZFP-modified cell lines for commercial production of protein pharmaceuticals and certain ZFP-engineered transgenic animals for commercial applications. Under the terms of the Agreement, Sigma made an upfront cash payment of $20.0 million consisting of a $4.9 million purchase of 636,133 shares of Sangamo common stock and a $15.1 million upfront license fee. The upfront license fee was recognized on a straight-line basis from the effective date of the expanded license through July 2010, which represents the period over which Sangamo was obligated to perform research services for Sigma. Sangamo is also eligible to receive commercial license fees of $5.0 million based upon a percentage of net sales and sublicensing revenue and thereafter a reduced royalty rate of 10.5% of net sales and sublicensing revenue. In addition, upon the achievement of certain cumulative commercial milestones Sigma will make milestone payments to Sangamo up to an aggregate of $25.0 million.

Revenues recognized under the agreement with Sigma for the three months ended March 31, 2014 and 2013, were as follows (in thousands):

	Three months ended March 31,	
	2014	2013
Revenue related to Sigma Collaboration:		
Royalty revenues	$ 106	$ 314
License fee and milestone revenues	179	—
Total	$ 285	$ 314

Related costs and expenses incurred under the Sigma agreement were $0.0 million and $0.1 million during the three months ended March 31, 2014 and 2013, respectively.

Agreement with Dow AgroSciences in Plant Agriculture

In October 2005, Sangamo entered into an exclusive commercial license agreement (the Agreement) with Dow AgroSciences LLC. (DAS), a wholly owned subsidiary of Dow Chemical. Under the Agreement, Sangamo provides DAS with access to its proprietary ZFP technology and the exclusive right to use the technology to modify the genomes or alter the nucleic acid or protein expression of plant cells, plants, or plant cell cultures. Sangamo has retained rights to use plants or plant-derived products to deliver ZFP transcription factors (ZFP TFs) or ZFP nucleases (ZFNs) into humans or animals for diagnostic, therapeutic or prophylactic purposes. The Agreement with DAS provided for an initial three-year research term. In June 2008, DAS exercised its option under the agreement to obtain a commercial license to sell products incorporating or derived from plant cells generated using the Company's ZFP technology, including agricultural crops, industrial products and plant-derived biopharmaceuticals. The exercise of the option triggered a one-time commercial license fee of $6.0 million, payment of the remaining $2.3 million of the previously agreed $4.0 million in research milestones, development and commercialization milestone payments for each product, and royalties on sales of products. Furthermore, DAS has the right to sublicense Sangamo's ZFP technology to third parties for use in plant cells, plants or plant cell cultures. Sangamo will be entitled to 25% of any cash consideration received by DAS under such sublicenses. In December 2010, the Company amended the Agreement with DAS to extend the period of reagent manufacturing services and research services through December 31, 2012.

The Agreement also provides for minimum license fees each year due to Sangamo every October, provided the Agreement is not terminated by DAS. Annual fees range from $250,000 to $3.0 million and total $25.3 million over 11 years. The Company does not have any ongoing performance obligations under the agreement with DAS. DAS has the right to terminate the Agreement at any time; accordingly, the Company's actual license fees over the term of the Agreement could be lower than $25.3 million. In addition, each party may terminate the Agreement upon an uncured material breach by the other party. In the event of any termination of the Agreement, all rights to use the Company's ZFP technology will revert to Sangamo, and DAS will no longer be permitted access to Sangamo's ZFP technology or to develop or, except in limited circumstances, commercialize any products derived from the Company's ZFP technology.

There were no revenues or related costs and expenses during the three months ended March 31, 2014 and 2013.

Funding from Research Foundations

California Institute for Regenerative Medicine - HIV

In October 2009, California Institute for Regenerative Medicine (CIRM), a State of California entity, granted a $14.5 million Disease Team Research Award to develop an HIV/AIDS therapy based on the application of ZFN gene editing technology in hematopoietic stem cells (HSCs). The four-year grant supports an innovative research project conducted by a multidisciplinary team of investigators, including investigators from the University of Southern California, City of Hope National Medical Center and Sangamo BioSciences. Sangamo received funds totaling $5.2 million from the total amount awarded based on expenses incurred for research and development efforts by Sangamo as prescribed in the agreement, and subject to its terms and conditions. The award is intended to substantially fund Sangamo's research and development efforts related to the agreement. The State of California has the right to receive, subject to the terms and conditions of the agreement between Sangamo and CIRM, payments from Sangamo resulting from sales of a commercial product resulting from research and development efforts supported by the grant, not to exceed two times the amount Sangamo receives in funding under the agreement with CIRM. As of December 31, 2013, all revenues under the award have been recognized and all funds have been received.

There were no revenues attributable to research and development performed under the CIRM grant agreement during the three months ended March 31, 2014. Revenues attributable to research and development performed under the CIRM grant agreement were $0.4 million during the three months ended March 31, 2013. Related costs and expenses were $0.3 million and $0.4 million during the three months ended March 31, 2014, and 2013, respectively.

California Institute for Regenerative Medicine - Beta-Thalassemia

In May 2013, CIRM granted Sangamo a $6.4 million Strategic Partnership Award to develop a potentially curative ZFP Therapeutic for beta-thalassemia based on the application of its ZFN gene editing technology in HSCs. The four-year grant provides matching funds for preclinical work that will support an IND application and a Phase 1 clinical trial in transfusion-dependent beta-thalassemia patients. The State of California has the right to receive, subject to the terms and conditions of the agreement between Sangamo and CIRM, payments from Sangamo, or its collaborators, from sales of a commercial product resulting from research and development efforts supported by the grant, in accordance with Title 17, California Code of Regulations, Section 100600.

Revenue attributable to research and development performed under the CIRM grant agreement for beta-thalassemia were $0.4 million during the three months ended March 31, 2014. Related costs and expenses were $1.3 million during the three months ended March 31, 2014.

NOTE 6—INTANGIBLE ASSETS

Intangible assets for in-process research and development (IPR&D) consist of two clinical product candidates from our acquisition of Ceregene. IPR&D is an intangible asset classified as an indefinite-lived until the completion or abandonment of the associated research and development effort, and will be amortized over an estimated useful life to be determined at the date the project is completed.

A summary of these assets and estimated fair values are as follows (in thousands):

	As of March 31, 2014	As of December 31, 2013
CERE-110 for the treatment of Alzheimer's disease	$ 1,640	$ 1,640
CERE-120 for the treatment of Parkinson's disease	230	230
Total identifiable intangible assets	$ 1,870	$ 1,870

The excess of the consideration transferred over the fair values assigned to the assets acquired and liabilities assumed, which is also known as goodwill, was $1.6 million. There was no change in goodwill for the three months ended March 31, 2014.

NOTE 7—INCOME TAXES

The Company maintains deferred tax assets that reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. These deferred tax assets include net operating loss carryforwards, research credits and capitalized research and development costs. Realization of deferred tax assets is dependent upon future earnings, if any, the timing and amount of which are uncertain based on Sangamo's history of losses. Accordingly, the Company's net deferred tax assets have been fully offset by a valuation allowance. Utilization of

operating losses and credits may be subject to substantial annual limitation due to ownership change provisions of the Internal Revenue Code of 1986, as amended and similar state provisions. The annual limitation may result in the expiration of net operating losses and credits before utilization.

NOTE 8—STOCK-BASED COMPENSATION

The following table shows total stock-based compensation expense included in the condensed consolidated statement of operations for the three months ended March 31, 2014 and 2013 (in thousands):

	Three months ended March 31,	
	2014	2013
Costs and expenses:		
Research and development	$ 1,073	$ 685
General and administrative	834	644
Total stock-based compensation expense	$ 1,907	$ 1,329

NOTE 9—STOCKHOLDERS' EQUITY

On March 26, 2014, Sangamo completed an underwritten public offering of its common stock, in which the Company sold an aggregate of 4,444,444 shares of its common stock at a public offering price of $22.50 per share. The net proceeds to Sangamo from the sale of shares in this offering, after deducting underwriting discounts and commissions and other estimated offering expenses, were approximately $93.8 million.

NOTE 10—SUBSEQUENT EVENT

On April 23, 2014, Sangamo filed a Certificate of Amendment of Seventh Amended and Restated Certificate of Incorporation of Sangamo BioSciences, Inc. and increased the total number of shares of common stock which the Corporation shall have authority to issue up to 160,000,000 shares.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The discussion in "Management's Discussion and Analysis of Financial Condition and Results of Operations" contains trend analysis, estimates and other forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements include, without limitation, statements containing the words "believes," "anticipates," "expects," "continue," and other words of similar import or the negative of those terms or expressions. Such forward-looking statements are subject to known and unknown risks, uncertainties, estimates and other factors that may cause the actual results, performance or achievements of the Company, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. You should read the following discussion and analysis along with the financial statements and notes attached to those statements included elsewhere in this report and in our annual report on Form 10-K for the year ended December 31, 2013 as filed with the SEC.

Overview

We are a clinical stage biopharmaceutical company focused on the research, development and commercialization of engineered DNA-binding proteins for the development of novel therapeutic strategies for unmet medical needs. Our current mission is to develop ZFP Therapeutics®, or human therapeutics based on our proprietary zinc finger DNA-binding protein (ZFP) technology, through early stage clinical testing, strategically partner with biopharmaceutical companies at points of value inflection and have the partner execute late-stage clinical trials and commercial development. In the long-term, our goal is to integrate marketing and development operations and to capture the value of late-stage and commercial ZFP Therapeutic products for ourselves.

We and our licensed partners are the leaders in the research, development and commercialization of ZFPs, a naturally occurring class of proteins. We have used our knowledge and expertise to develop a proprietary technology platform. ZFPs can be engineered to make ZFP nucleases (ZFNs), proteins that can be used to modify DNA sequences in a variety of ways and ZFP transcription factors (ZFP TFs), proteins that can be used to turn genes on or off. As ZFPs act at the DNA level, they have broad potential applications in several areas, including human therapeutics, plant agriculture and research reagents, as well as production of transgenic animals and cell-line engineering.

The main focus for our company is the development of novel human therapeutics and we are building a pipeline of ZFP Therapeutics. Our lead ZFP Therapeutic, SB-728-T, a ZFN-modified autologous T-cell product for the treatment of HIV/AIDS, is the first therapeutic application of our ZFN technology and is being evaluated in a Phase 2 clinical trial in HIV-infected subjects. On March 6, 2014, we presented clinical data from our clinical trials at the Conference on Retroviruses and Opportunistic Infections (CROI 2014) and expect to present additional data from this program at appropriate scientific and medical meetings in 2014 and 2015.

In January 2014, we entered into a collaborative partnership with Biogen Idec Inc. (Biogen) to research, develop and commercialize our preclinical ZFP Therapeutic development program in hemoglobinopathies, targeting sickle cell disease (SCD) and beta-thalassemia. We also have a collaborative partnership with Shire International GmbH, formerly Shire AG (Shire), to research, develop and commercialize certain of our preclinical ZFP Therapeutic development programs, including programs in hemophilia, Huntington's disease (HD) and other monogenic diseases. We have proprietary preclinical programs in several lysosomal storage disorders (LSDs). In addition, we have research stage programs in other monogenic diseases, including certain immunodeficiencies, as well as central nervous system (CNS) disorders and cancer immunotherapy.

We believe the potential commercial applications of ZFPs are broad-based and we have entered into strategic partnerships in fields outside human therapeutics to facilitate the sale or licensing of our ZFP platform as follows:

- We have a license agreement with the research reagent company Sigma-Aldrich Corporation (Sigma). Sigma has the exclusive rights to develop and market high value laboratory research reagents based upon our ZFP technology as well as ZFP-modified cell lines for commercial production of protein pharmaceuticals and ZFP-engineered transgenic animals. Sigma is marketing ZFN-derived gene editing tools under the trademark CompoZr®.
- We have a license agreement with Dow AgroSciences, LLC (DAS), a wholly owned subsidiary of Dow Chemical Corporation. Under the agreement, we have provided DAS with access to our ZFP technology and the exclusive rights to use it to modify the genomes or alter protein expression of plant cells, plants or plant cell cultures. DAS markets our ZFN technology under the trademark EXZACT™ Precision Technology. We have retained rights to use plants or plant-derived products to deliver ZFP TFs or ZFNs into human or animals for diagnostic, therapeutic or prophylactic purposes.

In October 2013, we acquired Ceregene, a privately held biotechnology company focused on the development of adeno-associated virus (AAV) gene therapies. The acquired assets include all of Ceregene's therapeutic programs, including CERE-110, an AAV expressing nerve growth factor (NGF) for the treatment of Alzheimer's disease (AD) that is currently in a Phase 2 clinical trial,

certain intellectual property rights relating to the manufacturing of AAV, certain toxicology data and safety and efficacy data from Ceregene's human clinical trials. We believe that these additional assets provide valuable reference materials for us in the preparation and filing of Investigative New Drug (IND) applications for our *in vivo* ZFP Therapeutics, particularly those that target the brain.

We have incurred net losses since inception and expect to incur losses in the future as we continue our research and development activities. To date, we have funded our operations primarily through the issuance of equity securities, payments from corporate collaborations and research grants.

For the three months ended March 31, 2014, we incurred a consolidated net loss of $7.6 million, or $0.12 per share, compared to a net loss of $6.9 million, or $0.13 per share, for the same period in 2013. As of March 31, 2014, we had cash, cash equivalents, marketable securities and interest receivable totaling $244.2 million compared to $131.8 million as of December 31, 2013. As of March 31, 2014, we had an accumulated deficit of $309.7 million.

Our revenues have consisted primarily of revenues from our corporate partners for ZFNs and ZFP TFs, contractual payments from strategic partners for research programs and research milestones, and research grant funding. We expect revenues will continue to fluctuate from period to period, and there can be no assurance that new collaborations or partner funding will continue beyond their initial terms.

In the development of our ZFP technology platform, we are focusing our resources on higher-value ZFP Therapeutic product development and less on our non-therapeutic applications. Development of novel therapeutic products is costly and is subject to a lengthy and uncertain regulatory process by the FDA. Our future products will be gene-based therapeutics. Adverse events in both our own clinical program and other programs may have a negative impact on regulatory approval, the willingness of potential commercial partners to enter into agreements and the perception of the public.

Critical Accounting Estimates

The accompanying discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements and the related disclosures, which have been prepared in accordance with generally accepted accounting principles in the United States. The preparation of these financial statements requires us to make estimates, assumptions and judgments that affect the reported amounts in our consolidated financial statements and accompanying notes. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We believe that there have been no significant changes in our critical accounting policies and estimates disclosed in our Annual Report on Form 10-K for the year ended December 31, 2013, as filed with the SEC.

Results of Operations

Three months ended March 31, 2014 and 2013

Revenues

	Three months ended March 31, (in thousands, except percentage values)			
	2014	2013	Change	%
Revenues:				
Collaboration agreements	$ 7,568	$ 4,083	$ 3,485	85%
Research grants	548	540	8	1%
Total revenues	$ 8,116	$ 4,623	$ 3,493	76%

Total revenues consist of revenues from collaboration agreements and research grants. We anticipate revenues over the next several years will primarily be derived from our collaboration agreements with Biogen, Shire, Sigma and DAS.

Revenues from our corporate collaboration agreements were $7.6 million for the three months ended March 31, 2014, compared to $4.1 million in the corresponding period in 2013. The $3.5 million increase in collaboration agreements revenues was primarily due to an increase of $2.8 million in research service revenues related to our collaboration and license agreements with Shire and Biogen. The revenues from Shire included partial recognition of an upfront payment of $13.0 million and revenues from research services. The revenues from Biogen included partial recognition of an upfront payment of $20.0 million and revenues from research services. We also recognized $0.7 million for royalty payment obligations under the license agreement with Open Monoclonal Technology, Inc.

Operating Expenses

	Three months ended March 31, (in thousands, except percentage values)			
	2014	2013	Change	%
Operating expenses:				
Research and development	$12,033	$ 8,220	$3,813	46%
General and administrative	3,644	3,308	336	10%
Change in fair value of contingent liability	50	—	50	100%
Total expenses	$15,727	$11,528	$4,199	36%

Research and development

Research and development expenses consist primarily of salaries and personnel related expenses, including stock-based compensation, laboratory supplies, preclinical and clinical studies, manufacturing expenses, allocated facilities expenses, subcontracted research expenses and expenses for trademark registration and technology licenses. We expect to continue to devote substantial resources to research and development in the future and expect research and development expenses to increase in the next several years if we are successful in advancing our HIV/AIDS program in the clinic and if we are able to move our earlier stage ZFP Therapeutic product candidates into clinical trials. We also expect that expenses related to research performed under our collaboration and license agreements with Biogen and Shire will increase our research and development expenses during the term of the agreement. Pursuant to the terms of the agreements with Biogen and Shire, future expenses related to research activities related to the collaboration will be reimbursed, including employee and external research costs related to the programs. The reimbursement funds received from Biogen and Shire will be recognized as revenue as the expenses are incurred and collection is reasonably assured.

Research and development expenses were $12.0 million for the three months ended March 31, 2014, compared to $8.2 million in the corresponding period in 2013. The increase of $3.8 million in research and development expenses was primarily due to an increase of $3.1 million in external expenses, lab supplies and other expenses related to our hemophilia, beta-thalassemia and Huntington's disease programs, $0.4 million in stock-based compensation expense and $0.3 million in salaries and benefits.

General and administrative

General and administrative expenses consist primarily of salaries, benefits and other expenses for executive, finance and administrative personnel, stock-based compensation expenses, professional fees, allocated facilities expenses, patent prosecution expenses and other general corporate expenses. As we pursue commercial development of our therapeutic programs, we expect the business aspects of the Company to become more complex. In the future we may be required to add personnel and incur additional expenses related to the maturity of our business.

General and administrative expenses were $3.6 million for the three month period ended March 31, 2014 and $3.3 million for the corresponding period in 2013. The increase was primarily related to $0.2 million in stock-based compensation expense and $0.1 million in professional services.

Liquidity and Capital Resources

Liquidity

Since inception, we have incurred significant net losses and we have funded our operations primarily through the issuance of equity securities, payments from corporate collaborators and strategic partners and research grants.

As of March 31, 2014, we had cash, cash equivalents, marketable securities and interest receivable totaling $244.2 million compared to $131.8 million as of December 31, 2013 with the increase primarily attributable to the completion of an underwritten public offering of the Company's common stock in March 2014, in which 4,444,444 shares of Sangamo common stock were sold at a public offering price of $22.50 per share. The net proceeds to the Company from the sale of shares in this offering, after deducting underwriting discounts and commissions and other estimated offering expenses, were approximately $93.8 million. Additionally, the increase was partially attributable to the upfront license fee of $20.0 million from Biogen pursuant to our collaboration and license agreement.

Our most significant use of capital pertains to salaries and benefits for our employees and external development expenses, such as manufacturing and clinical trial activities, related to our ZFP Therapeutic programs. Our cash and investment balances are held in a variety of interest bearing instruments, which can include obligations of U.S. government agencies, U.S. treasury debt securities, corporate debt securities and money market funds. Cash in excess of immediate requirements is invested in accordance with our investment policy with a view toward capital preservation and liquidity.

Under our agreement with Shire, we received an upfront license fee of $13.0 million. Shire will reimburse us for our costs incurred in connection with research and development activities conducted by us. We are also eligible to receive milestone payments based on our achievement of specified research, regulatory, clinical development, commercialization and sales milestones, which depends upon ours and Shire's ability to continue to progress our programs under collaboration. We will also be eligible to receive royalty payments that are a tiered double-digit percentage of net sales of products developed under the collaboration, if any.

Under the agreement with Biogen, we received an upfront license fee of $20.0 million. Biogen will reimburse us for our costs incurred in connection with research and development activities conducted by us. In addition, we are eligible to receive development milestone payments upon the achievement of specified regulatory, clinical development and commercialization milestones. We will also be eligible to receive incremental royalties for each licensed product that are a tiered double-digit percentage of annual net sales of such product, if any.

Cash Flow

Operating activities. Net cash provided by operating activities for the three months ended March 31, 2014 was $11.4 million, while cash used in operating activities was $8.0 million for the three months ended March 31, 2013. Net cash provided by operating activities for the three months ended March 31, 2014 primarily reflected the increases in deferred revenues related to our collaboration agreement with Biogen, accounts payable and stock-based compensation, partially offset by an increase in accounts receivable and decrease in accrued compensation. Net cash used in operating activities for the three months ended March 31, 2013 primarily reflects the net loss for the period and the decrease in deferred revenues related to our collaboration agreement with Shire, partially offset by stock-based compensation and other non-cash expenses included in net loss.

Investing activities. Net cash provided by investing activities was $3.9 million for the three months ended March 31, 2014, while cash used by operating activities was $3.7 million for the three months ended March 31, 2013. Cash flows from investing activities for both periods primarily related to purchases and maturities of investments.

Financing activities. Net cash provided by financing activities for the three months ended March 31, 2014 and 2013 was $101.4 million and $2.2 million, respectively. The increase for the three month period ended March 31, 2014 was primarily attributable to $93.8 million in net proceeds from the public offering of the Company's common stock completed on March 26, 2014, as well as proceeds from the issuance of common stock upon exercise of stock options. Net cash provided by financing activities for the three months ended March 31, 2013 was primarily attributable to proceeds from the issuance of common stock upon exercise of stock options.

Operating Capital and Capital Expenditure Requirements

We anticipate continuing to incur operating losses for at least the next several years. While our rate of cash usage may increase in the future, in particular to support our product development endeavors, we believe that the available cash resources as well as funds received from corporate collaborators, strategic partners and research grants will enable us to maintain our currently planned operations through 2015. Future capital requirements will be substantial, and if our capital resources are insufficient to meet future capital requirements, we will need to raise additional capital to fund our operations, including ZFP Therapeutic development activities, through equity or debt financing. We regularly consider fund raising opportunities and may decide, from time to time, to raise capital based on various factors, including market conditions and our plans of operation. Additional capital may not be available on terms acceptable to us, or at all. If adequate funds are not available, or if the terms of potential funding sources are unfavorable, our business and our ability to develop our technology and our ZFP Therapeutic products would be harmed. Furthermore, any sales of additional equity securities may result in dilution to our stockholders, and any debt financing may include covenants that restrict our business.

Our future capital requirements will depend on many factors and are not limited to the following:

- the initiation, progress, timing and completion of clinical trials for our product candidates;
- the outcome, timing and cost of regulatory approvals;
- the success of our collaboration with Shire, Biogen and other partners;
- delays that may be caused by changing regulatory requirements;
- the number of product candidates that we pursue;

- the costs involved in filing and prosecuting patent applications and enforcing and defending patent claims;
- the timing and terms of future in-licensing and out-licensing transactions;
- the cost of procuring clinical and commercial supplies of our product candidates;
- the extent to which we acquire or invest in businesses, products or technologies; and
- the costs of litigation.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Our primary exposure to market risk is interest income sensitivity relating to our cash, cash equivalents and investments, which is affected by changes in the general level of U.S. interest rates. We do not have any foreign currency or other derivative financial instruments.

Our market risks at March 31, 2014 have not changed materially from those discussed in Item 7A of our Form 10-K for the year ended December 31, 2013 on file with the SEC.

ITEM 4. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to provide reasonable assurance that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable, and not absolute, assurance of achieving the desired control objectives. In reaching a reasonable level of assurance, management necessarily was required to apply its judgment in evaluating the cost benefit relationship of possible controls and procedures.

As required by the Securities and Exchange Commission Rule 13a-15(b), we carried out an evaluation, under the supervision of and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the period covered by this report. Based on the foregoing, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level.

Change in Internal Control over Financial Reporting

There has been no change in our internal controls over financial reporting during our most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal controls over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

We are not party to any material pending legal proceedings.

ITEM 1A. RISK FACTORS

An investment in our common stock involves significant risk. You should carefully consider the information described in the following risk factors, together with the other information appearing elsewhere in this report, before making an investment decision regarding our common stock. You should also consider the risk factors set forth in our Annual Report on Form 10-K for the year ended December 31, 2013 ("2013 Annual Report") under the caption "Item 1A. Risk Factors," together with the other information appearing elsewhere in this report, before making an investment decision regarding our common stock. If any of the risks described below or in our 2013 Annual Report actually occur, our business, financial conditions, results of operation and future growth prospects would likely be materially and adversely affected. In these circumstances, the market price of our common stock could decline, and you may lose all or a part of your investment in our common stock. Moreover, the risks described below and in our 2013 Annual Report are not the only ones that we face. Additional risks not presently known to us or that we currently deem immaterial may also affect our business, operating results, prospects or financial condition. You should carefully consider these risk factors, together with all of the other information included in this Form 10-Q as well as our other publicly available filings with the Securities and Exchange Commission.

Risks Relating to Development, Commercialization and Regulatory Approval of our Products and Technology

ZFP Therapeutics have undergone limited testing in humans and our ZFP Therapeutics may fail safety studies in clinical trials.

We are conducting an on-going Phase 2 clinical trial of our ZFP Therapeutics for the treatment of HIV/AIDS. Preliminary data from these studies demonstrates that treatment of aviremic HIV-infected subjects with SB-728-T has been well-tolerated. In addition, data from Phase 1 and several Phase 2 clinical trials of our ZFP Therapeutic, SB-509, for diabetic neuropathy and ALS demonstrated that the drug was well tolerated in these studies. However, if one of our ZFP Therapeutic fails one of its safety studies, it could reduce our ability to attract new investors and corporate partners.

All of these studies are designed primarily to evaluate the safety and tolerability of this ZFP Therapeutic approach. Our clinical studies are a highly visible test of our ZFP Therapeutics and our investors assess the value of our technology primarily based on the continued progress of ZFP Therapeutic products into and through clinical trials. If clinical trials of our ZFP Therapeutic products were halted due to safety concerns, this would negatively affect our operations and the value of our stock.

Our progress in early Phase 1 and Phase 2 trials may not be indicative of long-term efficacy in late stage clinical trials.

The results in early phases of clinical testing are based upon limited numbers of patients and a limited follow-up period. Typically, our Phase 1 clinical trials for indications of safety enroll less than 25 patients. Our Phase 2 and late-stage clinical trials generally enroll a larger number of patients. Accordingly, any positive data obtained in early Phase 1 and Phase 2 trials may not be indicative of long-term efficacy in late-stage clinical trials. In September 2011, we announced preliminary data from our Phase 1 clinical program to develop SB-728-T for the treatment of HIV/AIDS. The data demonstrated a statistically significant relationship between SB-728-T and the reduction of HIV viral load. In January 2012, we initiated a Phase 2 clinical study (SB-728-902, Cohort 5) and a Phase 1/2 clinical study (SB-728-1101) for the treatment of HIV/AIDS. In December 2013, we presented data from all cohorts of these two clinical trials. Three of seven evaluable subjects in Cohort 5 showed a decrease of greater than one log in their viral load during a sixteen week treatment interruption (TI) with one subject achieving a transiently undetectable viral load during the TI period and one subject achieving control of viral load during TI for a prolonged period (31 weeks as of March 2014). In subjects in which viral load decreased, a measurable anti-HIV immune response was also observed. Additional data were presented from the Company's Phase 1 study (SB-728-902, Cohorts 1-3) that demonstrated a long-term decrease in the peripheral blood mononuclear cell (PBMC) HIV reservoir using a sensitive test for integrated HIV DNA in nine of nine subjects over a 36 month period (median decrease 0.9 logs). Additional subjects have been enrolled into the SB-728-1101 study to define the optimum dose of Cytoxan required to safely enhance engraftment and an additional 12 subjects will be enrolled in the Phase 2 study to further test this dose. However, there is no guarantee that these and other future studies of SB-728-T in later stage trials involving larger patient groups may produce positive or similar results as those obtained in earlier trials. Furthermore, in November 2013, we presented early positive data from Phase 1 clinical trial of CERE-110 for the treatment of AD, demonstrating that the drug was well-tolerated and resulted in appropriate delivery of the therapeutics. However, we cannot guarantee that additional studies and clinical trials of CERE-110 will replicate such positive results and demonstrate the efficacy of the drug.

A number of companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late stage clinical trials even after achieving promising results in earlier stage clinical trials. If a larger population of patients does not experience positive results, or if these results are not reproducible, our products may not receive approval from the FDA. Failure to confirm favorable results from earlier trials by demonstrating the safety and effectiveness of our ZFP Therapeutic products in late stage clinical trials with larger patient populations could have a material adverse effect on our business that would cause our stock price to decline significantly.

Our potential therapeutic products are subject to a lengthy and uncertain regulatory process, and we may encounter unanticipated toxicity or adverse events or fail to demonstrate efficacy, causing us to delay, suspend or terminate the development of a ZFP Therapeutic. If these potential products are not approved, we will not be able to commercialize those products.

The FDA must approve any human therapeutic product before it can be marketed in the United States. The process for receiving regulatory approval is long and uncertain, and a potential product may not withstand the rigors of testing under the regulatory approval processes.

Before commencing clinical trials in humans, we must submit an IND application to the FDA. The FDA has 30 days to comment on the application, and if the agency has no comments, we or our commercial partner may begin clinical trials. While we have stated our intention to file additional IND applications during the next several years, this is only a statement of intent, and we may not be able to do so because the associated product candidates may not meet the necessary preclinical requirements. In addition, there can be no assurance that, once filed, an IND application will result in the actual initiation of clinical trials. Clinical trials are subject to oversight by institutional review boards and the FDA. In addition, our proposed clinical studies require review from the Recombinant DNA Advisory Committee (RAC), which is the advisory board to the National Institutes of Health (NIH), focusing on clinical trials involving gene transfer. We will typically submit a proposed clinical protocol and other product-related information to the RAC three to six months prior to the expected IND application filing date.

Clinical trials:

- must be conducted in conformance with the FDA's good clinical practices, within the guidelines of the International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH) and other applicable regulations;
- must meet requirements for Institutional Review Board (IRB) oversight;
- must follow Institutional Biosafety Committee (IBC) and NIH RAC guidelines where applicable;
- must meet requirements for informed consent;
- are subject to continuing FDA oversight;

- may require oversight by a Data Safety Monitoring Board (DSMB);
- may require large numbers of test subjects; and
- may be suspended by a commercial partner, the FDA, or us at any time if it is believed that the subjects participating in these trials are being exposed to unacceptable health risks or if the FDA finds deficiencies in the IND application or the conduct of these trials.

We have limited experience in conducting clinical trials.

We have an ongoing Phase 2 clinical trial of a ZFP Therapeutic for HIV/AIDS and an ongoing Phase 2 trial to evaluate the safety and efficacy of AAV-NGF (CERE-110) for AD. However, the FDA will require additional clinical testing which involves significantly greater resources, commitments and expertise and so it is likely that we would need to enter into a collaborative relationship with a pharmaceutical company that could assume responsibility for late-stage development and commercialization.

We have limited experience in conducting advanced clinical trials and may not possess the necessary resources and expertise to complete such trials. We have entered into collaborative agreements with Shire and Biogen to provide funding and assistance in the development of our ZFP Therapeutics through the clinical trial process. Under the agreement with Shire, we are responsible for all activities through submission of IND Applications and European CTAs and Shire is responsible for clinical development and commercialization of products arising from the alliance. Under the Agreement with Biogen, we are responsible for all research and development through the first human clinical trial for the treatment of beta-thalassemia and both parties are responsible for research and development through the submission of IND for ZFP Therapeutics to treat sickle cell disease (SCD). However, there is no guarantee that we will be able to enter into future collaborative relationships with third parties that can provide us with the funding and expertise for later stage trials.

While we have stated that we intend to file IND applications for several ZFP Therapeutic programs over the next two years, we may encounter difficulties that may delay, suspend or scale back our efforts.

We have previously announced a strategy for our ZFP Therapeutic programs that enables the potential filing of eight IND applications by the end of 2015. The preparation and submission of IND applications requires us to conduct rigorous and time-consuming preclinical testing, studies, and documentation relating to, among other things, the toxicity, safety, manufacturing, chemistry and clinical protocol of new ZFP Therapeutic products. We may experience unforeseen difficulties that could delay or otherwise prevent us from executing this strategy successfully. For example, we may encounter problems in the manufacturing of our ZFP Therapeutic products and fail to demonstrate consistency in the formulation of the drug. Our preclinical tests may produce negative or inconclusive results, which may lead us to decide, or regulators may require us, to conduct additional preclinical testing. If we cannot obtain positive results in preclinical testing, we may decide to abandon the projects altogether. Furthermore, the filing of several IND applications involves significant cost and labor, and we may not have sufficient resources and personnel to complete the filing of all intended IND applications, which may force us to scale back the number of IND applications or forego potential IND applications that we believe are promising. Any delay, suspension or reduction of our efforts to pursue our preclinical and IND strategy could have a material adverse effect on our business and cause our stock price to decline.

We may not be able to find acceptable patients or may experience delays in enrolling patients for our clinical trials.

We may experience difficulties or delays in recruiting and enrolling a sufficient number of patients to participate in our clinical trials due to a variety of reasons, including competition from other clinical trial programs for the same indication, failure of patients to meet our enrollment criteria and premature withdraws of patients prior to the completion of clinical trials. The FDA and institutional review boards may also require large numbers of patients, and the FDA may require that we repeat a clinical trial. Any delay resulting from our failure to enroll a sufficient number of patients on a timely basis may have a material adverse affect on our business.

As we cannot predict whether or when we will obtain regulatory approval to commercialize our product candidates, we cannot predict the timing of any future revenue from these product candidates.

We cannot commercialize any of our ZFP Therapeutics to generate revenue until the appropriate regulatory authorities have reviewed and approved the applications for the product candidates. We cannot ensure that the regulatory agencies will complete their review processes in a timely manner or that we will obtain regulatory approval for any product candidate that we or our collaborators develop. Satisfaction of regulatory requirements typically takes many years, is dependent upon the type, complexity and novelty of the product and requires the expenditure of substantial resources. Regulatory approval processes outside the United States include all of the risks associated with the FDA approval process. In addition, we may experience delays or rejections based upon additional government regulation from future legislation or administrative action or changes in FDA policy during the period of product development, clinical trials and FDA regulatory review.

Regulatory approval, if granted, will be limited to specific uses or geographic areas, which could limit our ability to generate revenues.

Regulatory approval will be limited to the indicated use for which we can market a product. Further, once regulatory approval for a product is obtained, the product and its manufacturer are subject to continual review. Discovery of previously unknown problems with a product or manufacturer may result in restrictions on the product, manufacturer, and manufacturing facility, including withdrawal of the product from the market. In Japan and Europe, regulatory agencies also set or approve prices.

Even if regulatory clearance of a product is granted, this clearance is limited to those specific states and conditions for which the product is useful, as demonstrated through clinical trials. We cannot ensure that any ZFP Therapeutic product developed by us, alone or with others, will prove to be safe and effective in clinical trials and will meet all of the applicable regulatory requirements needed to receive marketing clearance in a given country.

Outside the United States, our ability to market a product is contingent upon receiving a marketing authorization from appropriate regulatory authorities; therefore we cannot predict whether or when we would be permitted to commercialize our product. These foreign regulatory approval processes include all of the risks associated with FDA clearance described above.

Commercialization of our technologies will depend, in part, on strategic partnering with other companies. If we are not able to find partners in the future or our partners do not diligently pursue product development efforts, we may not be able to develop our technologies or products, which could slow our growth and decrease the value of our stock.

We expect to rely, to some extent, on our strategic partners to provide funding in support of our research and to perform independent research and preclinical and clinical testing. Our technology is broad based, and we do not currently possess the resources necessary to fully develop and commercialize potential products that may result from our technologies or the resources or capabilities to complete the lengthy marketing approval processes that may be required for the products. Therefore, we plan to rely on strategic partnerships to help us develop and commercialize ZFP Therapeutic products. If we are unable to find partners or if the partners we find, such as Shire and Biogen, are unable or unwilling to advance our programs, or if they do not diligently pursue product approval, this may slow our progress and defer our revenues. Our partners may sublicense or abandon development programs or we may have disagreements with our partners, which would cause associated product development to slow or cease. There can be no assurance that we will be able to establish further strategic collaborations for ZFP Therapeutic product development. We may require significant time to secure collaborations or partners because we need to effectively market the benefits of our technology to these future collaborators and partners, which may direct the attention and resources of our research and development personnel and management away from our primary business operations. Further, each collaboration or partnering arrangement will involve the negotiation of terms that may be unique to each collaborator or partner. These business development efforts may not result in a collaboration or partnership.

The loss of partnering agreements would not only delay or terminate the potential development or commercialization of products we may derive from our technologies, but it may also delay or terminate our ability to test ZFP Therapeutic candidates for specific genes. If any partner fails to conduct the collaborative activities successfully and in a timely manner, the preclinical or clinical development or commercialization of the affected product candidates or research programs could be delayed or terminated.

Under typical partnering agreements, we would expect to receive revenue for the research and development of a ZFP Therapeutic product based on achievement of specific milestones, as well as royalties based on a percentage of sales of the commercialized products. Achieving these milestones will depend, in part, on the efforts of our partner as well as our own. If we, or any partner, fail to meet specific milestones, then the partnership may be terminated, which could reduce our revenues. For more information on risks relating to our third party collaborative agreements, see “Risks Relating to our Collaborative Relationships.”

We may be unable to license gene transfer technologies that we may need to commercialize our ZFP technology.

In order to regulate or modify a gene in a cell, the ZFP must be efficiently delivered to the cell. We have licensed certain gene transfer technologies for our ZFP in research. We are evaluating these systems and other technologies that may need to be used in the delivery of ZFP into cells for *in vitro* and *in vivo* applications, including ZFP Therapeutics. However, we may not be able to license the gene transfer technologies required to develop and commercialize our ZFP Therapeutics. We have not developed our own gene transfer technologies, and we rely on our ability to enter into license agreements to provide us with rights to the necessary gene transfer technology. Our approach has been to license appropriate technology as required. The inability to obtain a license to use gene transfer technologies with entities which own such technology on reasonable commercial terms, if at all, could delay or prevent the preclinical evaluation, drug development collaborations, clinical testing, and/or commercialization of our therapeutic product candidates.

Our gene regulation and gene modification technology is relatively new, and if we are unable to use this technology in all our intended applications, it would limit our revenue opportunities.

Our technology involves a relatively new approach to gene regulation and gene modification. Although we have generated ZFPs for thousands of gene sequences, we have not created ZFPs for all gene sequences and may not be able do so, which could limit the usefulness of our technology. In addition, while we have demonstrated the function of engineered ZFNs and ZFP TFs in mammalian cells, yeast, insects, plants and animals, we have not yet demonstrated clinical benefit of this technology in humans, and the failure to do so could restrict our ability to develop commercially viable products. If we, and our collaborators or strategic partners, are unable to extend our results to new commercially important genes, experimental animal models, and human clinical studies, we may be unable to use our technology in all its intended applications.

The expected value and utility of our ZFNs and ZFP TFs is in part based on our belief that the targeted modification of genes or specific regulation of gene expression may enable us to develop a new therapeutic approach as well as to help scientists better understand the role of genes in disease, and to aid their efforts in drug discovery and development. We also believe that ZFP-mediated targeted gene editing and gene regulation will have utility in agricultural applications. There is only a limited understanding of the role of specific genes in all these fields. Life sciences companies have developed or commercialized only a few products in any of these fields based on results from genomic research or the ability to regulate gene expression. We, our collaborators or our strategic partners, may not be able to use our technology to identify and validate drug targets or to develop commercial products in the intended markets.

Effective delivery of ZFNs and ZFP TFs into the appropriate target cells and tissues is critical to the success of the therapeutic applications of our ZFP technology. In order to have a meaningful therapeutic effect, the ZFP Therapeutic must be delivered to sufficient numbers of cells in the targeted tissue. The ZFN or ZFP TF must be present in that tissue for sufficient time to effect either modification of a therapeutically relevant gene or regulation of its expression. In our current clinical and preclinical programs, we administer our ZFP Therapeutics as a nucleic acid that encodes the ZFN or ZFP TF. We use different formulations to deliver the ZFP Therapeutic depending on the required duration of expression, the targeted tissue and the indication that we intend to treat. However, there can be no assurances that we will be able to effectively deliver our ZFNs and ZFP TFs to produce a beneficial therapeutic effect.

We are conducting proprietary research to discover ZFP Therapeutic product candidates. These programs increase our financial risk of product failure, may significantly increase our research expenditures, and may involve conflicts with future collaborators and strategic partners.

Our proprietary research programs consist of research that is funded solely by us or by grant funding and in which we retain exclusive rights to therapeutic products generated by such research. This is in contrast to certain of our research programs that may be funded by corporate partners in which we may share rights to any resulting products. Conducting proprietary research programs may not generate corresponding revenue and may create conflicts with our collaborators or strategic partners over rights to our intellectual property with respect to our proprietary research activities. Any conflict with our collaborators or strategic partners could reduce our ability to enter into future collaborations or partnering agreements and negatively impact our relationship with existing collaborators and partners that could reduce our revenue and delay or terminate our product development. As we continue to focus our strategy on proprietary research and therapeutic development, we expect to experience greater business risks, expend significantly greater funds and require substantial commitments of time from our management and staff.

Even if our technology proves to be effective, it still may not lead to commercially viable products.

Even if our collaborators or strategic partners are successful in using our ZFP technology in drug discovery, protein production, therapeutic development or plant agriculture, they may not be able to commercialize the resulting products or may decide to use other methods competitive with our technology. To date, no company has received marketing approval or has developed or commercialized any therapeutic or agricultural products based on our technology. Should our technology fail to provide safe, effective, useful or commercially viable approaches to the discovery and development of these products, this would significantly limit our business and future growth and would adversely affect our value.

Even if our product development efforts are successful and even if the requisite regulatory approvals are obtained, our ZFP Therapeutics may not gain market acceptance among physicians, patients, healthcare payers and the medical community.

A number of additional factors may limit the market acceptance of our ZFP Therapeutic products including the following:

- rate of adoption by healthcare practitioners;

- rate of a product's acceptance by the target population;
- timing of market entry relative to competitive products;
- availability of alternative therapies;
- price of our product relative to alternative therapies;
- availability of third-party reimbursement;
- extent of marketing efforts by us and third-party distributors or agents retained by us; and
- side effects or unfavorable publicity concerning our products or similar products.

Therefore, even after we have obtained the required regulatory approval for our ZFP Therapeutic products, we may not be able to commercialize these products successfully if we cannot achieve an adequate level of market acceptance.

We do not currently have the infrastructure or capability to manufacture, market and sell therapeutic products on a commercial scale.

In order for us to commercialize our therapeutic products directly, we would need to develop, or obtain through outsourcing arrangements, the capability to manufacture, market and sell our products on a commercial scale. Currently, we do not have the ability nor the financial resources to establish the infrastructure and organizations needed to execute these functions, including such infrastructure needed for the commercialization of any product from our HIV/AIDS or AD programs, which can be complex and costly. If we are unable to establish adequate manufacturing, sales, marketing and distribution capabilities, we will not be able to directly commercialize our therapeutics products, which would limit our future growth.

We may not be able to fully realize the expected benefits from the acquisition of Ceregene, Inc., and the operation of the new business of Ceregene, Inc. may subject us to additional risks.

In October 2013, we acquired Ceregene, including all of its therapeutic programs and related intellectual property and other assets. Although we expect to realize strategic, operational and financial benefits as a result of the acquisition, we cannot be certain whether, and to what extent, such benefits will be achieved in the future. In particular, the success of the acquisition will depend on our ability to efficiently and successfully integrate and develop Ceregene's business, including the prosecution of its CERE-110 Phase 2 clinical trial, and to apply Ceregene's technology to advance our ZFP Therapeutics. There is no guarantee that any existing and future clinical trials of Ceregene's product candidates, including CERE-110 for the treatment of AD, will produce positive results, and failure to do so may adversely affect our ability to validate the AAV delivery technology and apply such technology to our ZFP products as well as negatively impact our stock price. In April 2013, Ceregene reported that its top line data for the CERE-120 Phase 2b clinical trial for Parkinson's disease did not demonstrate statistically significant efficacy in the primary endpoint. In November 2013, we presented early positive data from Phase 1 clinical trial of CERE-110 demonstrating that the drug was well-tolerated and resulted in appropriate delivery of the therapeutic. However, even if we obtain positive data from such clinical trials, there is no guarantee that the AAV delivery technology can be applied to our ZFP Therapeutics safely and effectively.

The acquisition of Ceregene also subjects us to additional operational and financial risks, including the following:

- additional costs that we may need to incur in order to conduct and complete Ceregene's therapeutic programs, including the CERE-110 Phase 2 clinical trial, and to comply with new regulatory requirements;
- difficulties acquiring and developing the necessary expertise to continue the development of AAV technologies and other acquired assets of Ceregene;
- difficulties in coordinating research and development activities;
- uncertainties in the business relationships with our collaborators and suppliers due to the acquisition;
- lack of previous experiences in conducting Phase 2 trials of a gene therapy based on AAV vector delivery system.

In addition, the market price of our common stock may decline as a result of the merger if the integration of Ceregene is unsuccessful, takes longer than expected or fails to achieve the expected benefits to the extent anticipated by financial analysts or investors, or the effect of the acquisition on our financial results is otherwise not consistent with the expectation of financial analysts or investors.

Risks Relating to our Industry

If our competitors develop, acquire, or market technologies or products that are more effective than ours, this would reduce or eliminate our commercial opportunity.

Any products that we or our collaborators or strategic partners develop by using our ZFP technology platform will enter into highly competitive markets. Even if we are able to generate ZFP Therapeutics that are safe and effective for their intended use, competing technologies may prove to be more effective or less expensive, which, to the extent these competing technologies achieve market acceptance, will limit our revenue opportunities. In some cases, competing technologies have proven to be effective and less expensive. Competing technologies may include other methods of regulating gene expression or modifying genes. ZFNs and ZFP TFs have broad application in the life sciences industry and compete with a broad array of new technologies and approaches being applied to genetic research by many companies. Competing proprietary technologies with our product development focus include but are not limited to:

- For ZFP Therapeutics:
  - small molecule drugs;
  - monoclonal antibodies;
  - recombinant proteins;
  - gene therapy/cDNAs;
  - antisense;
  - siRNA and microRNA approaches, exon skipping;
  - CRISPR/Cas9 technology;
  - TALE proteins; and
  - meganucleases.
- For our Non-Therapeutic Applications:
  - *For protein production:* gene amplification, meganucleases, TALE technology, insulator technology, mini-chromosomes and CRISPR/Cas9 technology;
  - *For target validation:* antisense, siRNA, TALE technology and CRISPR/Cas9 technology;
  - *For plant agriculture:* recombination approaches, mutagenesis approaches, meganucleases, TALE technology, CRISPR/Cas9 technology, mini-chromosomes; and
  - *For transgenic animals:* somatic nuclear transfer, embryonic stem cell, TALE, CRISPR/Cas9 technology and transposase technologies.

In addition to possessing competing technologies, our competitors include pharmaceutical and biotechnology companies with:

- substantially greater capital resources than ours;
- larger research and development staffs and facilities than ours; and
- greater experience in product development and in obtaining regulatory approvals and patent protection.

These organizations also compete with us to:

- attract qualified personnel;
- attract parties for acquisitions, joint ventures or other collaborations; and
- license the proprietary technologies of academic and research institutions that are competitive with our technology, which may preclude us from pursuing similar opportunities.

Accordingly, our competitors may succeed in obtaining patent protection or commercializing products before us. In addition, any products that we develop may compete with existing products or services that are well established in the marketplace.

Adverse public perception in the field of gene therapy may negatively impact regulatory approval of, or demand for, our potential products.

Our potential therapeutic products are delivered to patients as gene-based drugs, or gene therapy. The clinical and commercial success of our potential products will depend in part on public acceptance of the use of gene therapy for the prevention or treatment of human diseases. Public attitudes may be influenced by claims that gene therapy is unsafe, and, consequently, our products may not gain the acceptance of the public or the medical community. Negative public reaction to gene therapy in general could result in greater government regulation and stricter labeling requirements of gene therapy products, including any of our products, and could cause a decrease in the demand for any products we may develop.

Laws or public sentiment may limit the production of genetically modified agricultural products, and these laws could reduce our partner's ability to sell such products.

Genetically modified products are currently subject to public debate and heightened regulatory scrutiny, either of which could prevent or delay production of agricultural products. We have a research license and commercial option agreement with DAS through which we provide DAS with access to our proprietary ZFP technology and the exclusive right to use our ZFP technology to modify the genomes or alter the nucleic acid or protein expression of plant cells, plants, or plant cell cultures. The field-testing, production and marketing of genetically modified plants and plant products are subject to federal, state, local and foreign governmental regulation. Regulatory agencies administering existing or future regulations or legislation may not allow production and marketing of our genetically modified products in a timely manner or under technically or commercially feasible conditions. In addition, regulatory action or private litigation could result in expenses, delays or other impediments to our product development programs or the commercialization of resulting products.

The FDA currently applies the same regulatory standards to foods developed through genetic engineering as those applied to foods developed through traditional plant breeding. Genetically engineered food products, however, will be subject to pre-market review if these products raise safety questions or are deemed to be food additives. Governmental authorities could also, for social or other purposes, limit the use of genetically modified products created with our gene regulation technology.

Even if the regulatory approval for genetically modified products developed under our agreement with DAS was obtained, our success will also depend on public acceptance of the use of genetically modified products including drugs, plants, and plant products. Claims that genetically modified products are unsafe for consumption or pose a danger to the environment may influence public attitudes. Our genetically modified products may not gain public acceptance. The subject of genetically modified organisms has received negative publicity in the United States and particularly in Europe, and such publicity has aroused public debate. The adverse publicity in Europe could lead to greater regulation and trade restrictions on imports of genetically altered products. Similar adverse public reaction or sentiment in the United States to genetic research and its resulting products could result in greater domestic regulation and could decrease the demand for our technology and products.

Risks Relating to our Finances

We have incurred significant operating losses since inception and anticipate that we will incur continued losses for the foreseeable future.

We have generated operating losses since we began operations in 1995. Our net losses for the years ended December 31, 2013, 2012 and 2011 were $26.6 million, $22.3 million, and $35.8 million, respectively. The extent of our future losses and the timing of profitability are uncertain, and we expect to incur losses for the foreseeable future. We have been engaged in developing our ZFP technology since inception, which has and will continue to require significant research and development expenditures. To date, we have generated our funding from issuance of equity securities, revenues derived from collaboration agreements, other strategic partnerships in non-therapeutic applications of our technology, federal government research grants and grants awarded by research foundations. As of March 31, 2014, we had an accumulated deficit of $309.7 million. Since our IPO in 2000, we have generated an aggregate of approximately $331.4 million in gross proceeds from the sale of our equity securities. We expect to continue to incur additional operating losses for the next several years as we continue to expand and extend our research and development activities into human therapeutic product development. If the time required to generate significant product revenues and achieve profitability is longer than we currently anticipate or if we are unable to generate liquidity through equity financing or other sources of funding, we may be forced to curtail or suspend our operations.

We may be unable to raise additional capital, which would harm our ability to develop our technology and products.

We have incurred significant operating losses and negative operating cash flows since inception and have not achieved profitability. We expect capital outlays and operating expenditures to increase over the next several years as we expand our infrastructure and research and ZFP Therapeutic product development activities. While we believe our financial resources will be adequate to sustain our current operations at least through 2015, we may need to seek additional sources of capital through equity or debt financing. In addition, as we focus our efforts on proprietary human therapeutics, we will need to seek FDA approval of potential products, a process that could cost in excess of hundreds of millions of dollars per product. Furthermore, we may experience difficulties in accessing the capital market due to external factors beyond our control such as volatility in the equity markets for emerging biotechnology companies and general economic and market conditions. We cannot be certain that we will be able to obtain financing on terms acceptable to us, or at all. Our failure to obtain adequate and timely funding will materially adversely affect our business and our ability to develop our technology and ZFP Therapeutic products. Furthermore, any sales of additional equity securities may result in dilutions to our stockholders and any debt financing may include business and financial covenants that restricts our operations.

We are at the development phase of operations and may not succeed or become profitable.

We began operations in 1995 and are in the early phases of ZFP Therapeutic product development, and we have incurred significant losses since inception. To date, our revenues have been generated from collaboration agreements , other collaborations in non-therapeutic applications of our technology, federal government research grants and grants awarded by research foundations. Our focus on higher-value therapeutic product development and related collaboration requires us to incur substantial expenses associated with product development. In addition, the preclinical or clinical failure of any single product may have a significant effect on the actual or perceived value of our stock. Our business is subject to all of the risks inherent in the development of a new technology, which includes the need to:

- attract and retain qualified scientific and technical staff and management, particularly scientific staff with expertise to develop our early-stage technology into therapeutic products;
- obtain sufficient capital to support the expense of developing our technology platform and developing, testing and commercializing products;
- develop a market for our products; and
- successfully transition from a company with a research focus to a company capable of supporting commercial activities.

Risks Relating to our Relationships with Collaborators and Strategic Partners

If conflicts arise between us and our collaborators or strategic partners, these parties may act in their self-interest, which may limit our ability to implement our strategies.

If conflicts arise between our corporate or academic collaborators or strategic partners and us, the other party may act in its self-interest, which may limit our ability to implement our strategies. Some of our academic collaborators and strategic partners are conducting multiple product development efforts within each area that is the subject of the collaboration with us. Our collaborators or strategic partners, however, may develop, either alone or with others, products in related fields that are competitive with the products or potential products that are the subject of these collaborations. Competing products, either developed by the collaborators or strategic partners or to which the collaborators or strategic partners have rights, may result in the withdrawal of partner support for our product candidates.

Some of our collaborators or strategic partners could also become our competitors in the future. Our collaborators or strategic partners could develop competing products, preclude us from entering into collaborations with their competitors, fail to obtain timely regulatory approvals, terminate their agreements with us prematurely, or fail to devote sufficient resources to the development and commercialization of products. Any of these developments could harm our product development efforts.

Our collaborators and strategic partners may control aspects of our clinical trials, which could result in delays and other obstacles in the commercialization of our proposed products.

For some programs, we depend on third party collaborators and strategic partners to design and conduct our clinical trials. As a result, we may not be able to conduct these programs in the manner or on the time schedule we currently contemplate, which may negatively impact our business operations. In addition, if any of these collaborators or strategic partners withdraws support for our programs or proposed products or otherwise impair their development; our business could be negatively affected.

In January 2012, we entered into a collaborative agreement with Shire, pursuant to which we are engaging in a joint program with Shire to research, develop and commercialize human therapeutics and diagnostics for hemophilia, Huntington's disease and other monogenic diseases based on our ZFP technology. Under this agreement, we are responsible for all research activities through the submission of an IND or CTA, while Shire is responsible for clinical development and commercialization of products generated from the research program from and after the acceptance of an IND or CTA for the product. Under the agreement, we may be eligible to receive milestone payments upon the achievement of specified clinical development, commercialization and post-commercialization milestones. The total amount of potential milestone payments for each gene target, assuming the achievements of all specified milestones in the agreement, is $213.5 million. We may receive royalty payments based on specified percentages of net sales of products, if any.

In addition, in January 2014, we entered into a collaborative agreement with Biogen for the clinical development and commercialization of therapeutics based on our ZFP technology for hemoglobinopathies, including beta-thalassemia and SCD. Under the Agreement, we are responsible for all discovery, research and development activities through the first human clinical trial for the first ZFP Therapeutic developed for the treatment of beta-thalassemia. In the SCD program, both parties are responsible for research and development activities through the submission of an IND. Under both programs, Biogen is responsible for subsequent clinical development, manufacturing and commercialization of licensed products developed under the Agreement. Under the agreement with Biogen, we may be eligible to receive payments upon the achievement of specified regulatory, clinical development, commercialization, and sales milestones of up to $293.8 million. We may also receive royalty payments based on specified percentage of annual net sales of products, if any.

Under these agreements with Biogen and Shire we will have control and broad discretion over all or certain aspects of the clinical development and commercialization of any product developed under the agreements, and we will have little, if any, influence on how these programs will be conducted. Our lack of control over the clinical development in our agreement with Biogen and Shire could cause delays or other difficulties in the development and commercialization of our product candidates, which may prevent us from receiving any milestone, royalty payments and other benefits under the agreement. In addition, under their respective agreement(s), Biogen and Shire have certain rights to terminate the agreements by providing us with advance notices, therefore, the actual milestone payments that we may receive under these agreements may be lower than the full amounts stated above.

Our collaborators or strategic partners may decide to adopt alternative technologies or may be unable to develop commercially viable products with our technology, which would negatively impact our revenues and our strategy to develop these products.

Our collaborators or strategic partners may adopt alternative technologies, which could decrease the marketability of ZFP technology. Additionally, because many of our collaborators or strategic partners are likely to be working on more than one development project, they could choose to shift their resources to projects other than those they are working on with us. If they do so, this would delay our ability to test our technology and would delay or terminate the development of potential products based on our ZFP technology. Further, our collaborators and strategic partners may elect not to develop products arising out of our collaborative and strategic partnering arrangements or to devote sufficient resources to the development, manufacturing, marketing or sale of these products. If any of these events occur, we may not be able to develop our technologies or commercialize our products.

If we do not successfully commercialize ZFP-based research reagents, ZFP-modified cell lines for commercial protein production, or ZFP-engineered transgenic animals under our license agreement with Sigma-Aldrich Corporation or ZFP-based agricultural products with Dow AgroSciences, or if Sigma-Aldrich Corporation or Dow AgroSciences terminates our agreements, our ability to generate revenue under these license agreements may be limited.

In July 2007, we entered into a license agreement with Sigma to collaborate in the application and development of ZFP-based products for use in the laboratory research reagents markets. The agreement provides Sigma with access to our ZFP technology and the exclusive right to use our ZFP technology to develop and commercialize products for use as research reagents and to offer services in related research fields. This relationship was expanded in October 2009 when we amended our license agreement with Sigma to provide Sigma with the exclusive rights to develop and distribute ZFP-modified cell lines for commercial production of protein pharmaceuticals and, certain ZFP-engineered transgenic animals for commercial applications. In June 2008, following a research period, DAS exercised its commercial license option under a license agreement with us relating to plant agriculture. This agreement

provides DAS with the exclusive right to develop agricultural products using our ZFP technology in plant cells, plants or plant cell cultures. Both companies also have the right to sublicense our technology in their respective areas. In addition to upfront payments, we may also receive additional license fees, shared sublicensing revenues, royalty payments and milestone payments depending on the success of the development and commercialization of the licensed products and services covered under both agreements. The commercial milestones and royalties are typically based upon net sales of licensed products.

We cannot be certain that we or our collaboration partners will succeed in the development of commercially viable products in these fields of use, and there is no guarantee that we or our collaboration partners will achieve the milestones set forth in the respective license agreements. To the extent we or our collaboration partners do not succeed in developing and commercializing products or if we or our collaboration partners fail to achieve such milestones, our revenues and benefits under the license agreements will be limited. In addition, the respective license agreements may be terminated by Sigma and DAS at any time by providing us with a 90-day notice. In the event Sigma or DAS decides to terminate the license agreements, our ability to generate revenue under such license agreements will cease.

Our collaborations with outside scientists may be subject to change, which could limit our access to their expertise.

We work with scientific advisors and collaborators at academic research institutions. These scientists are not our employees and may have other commitments that would limit their availability to us. Although our scientific advisors generally agree not to do competing work, if a conflict of interest between their work for us and their work for another entity arises, we may lose their services. Although our scientific advisors and academic collaborators sign agreements not to disclose our confidential information, it is possible that some of our valuable proprietary knowledge may become publicly known through them, which may cause competitive harm to our business.

Risks Relating to our Intellectual Property and Business Operation

Because it is difficult and costly to protect our proprietary rights, and third parties have filed patent applications that are similar to ours, we cannot ensure the proprietary protection of our technologies and products.

Our commercial success will depend in part on obtaining patent protection of our technology and successfully defending any of our patents that may be challenged. The patent positions of pharmaceutical and biotechnology companies can be highly uncertain and can involve complex legal and factual questions. No consistent policy regarding the breadth of claims allowed in biotechnology patents has emerged to date. Accordingly, we cannot predict the breadth of claims allowed in patents we own or license.

We are a party to various license agreements that give us rights under specified patents and patent applications. Our current licenses, as our future licenses frequently will, contain performance obligations. If we fail to meet those obligations, the licenses could be terminated. If we are unable to continue to license these technologies on commercially reasonable terms, or at all, we may be forced to delay or terminate our product development and research activities.

With respect to our present and any future sublicenses, since our rights derive from those granted to our sublicensor, we are subject to the risk that our sublicensor may fail to perform its obligations under the master license or fail to inform us of useful improvements in, or additions to, the underlying intellectual property owned by the original licensor.

We are unable to exercise the same degree of control over intellectual property that we license from third parties as we exercise over our internally developed intellectual property. We do not control the prosecution of certain of the patent applications that we license from third parties; therefore, the patent applications may not be prosecuted as we desire or in a timely manner.

The degree of future protection for our proprietary rights is uncertain, and we cannot ensure that:

- we or our licensors were the first to make the inventions covered by each of our pending patent applications;
- we or our licensors were the first to file patent applications for these inventions;
- the patents of others will not have an adverse effect on our ability to do business;
- others will not independently develop similar or alternative technologies or reverse engineer any of our products, processes or technologies;
- any of our pending patent applications will result in issued patents;
- any patents issued or licensed to us or our collaborators or strategic partners will provide a basis for commercially viable products or will provide us with any competitive advantages;
- any patents issued or licensed to us will not be challenged and invalidated by third parties; or
- we will develop additional products, processes or technologies that are patentable.

Others have filed and in the future are likely to file patent applications that are similar to ours. We are aware that there are academic groups and other companies that are attempting to develop technology that is based on the use of zinc finger, TALE and other DNA-binding proteins, and that these groups and companies have filed patent applications. Several patents have been issued, although we have no current plans to use the associated inventions. If these or other patents issue, it is possible that the holder of any patent or patents granted on these applications may bring an infringement action against our collaborators, strategic partners, or us claiming damages and seeking to enjoin commercial activities relating to the affected products and processes. The costs of litigating the claim could be substantial. Moreover, we cannot predict whether we, our collaborators, or strategic partners would prevail in any actions. In addition, if the relevant patent claims were upheld as valid and enforceable and our products or processes were found to infringe the patent or patents, we could be prevented from making, using, or selling the relevant product or process unless we could obtain a license or were able to design around the patent claims. We can give no assurance that such a license would be available on commercially reasonable terms, or at all, or that we would be able to successfully design around the relevant patent claims. There may be significant litigation in the genomics industry regarding patent and other intellectual property rights, which could subject us to litigation. If we become involved in litigation, it could consume a substantial portion of our managerial and financial resources.

We rely on trade secrets to protect technology where we believe patent protection is not appropriate or obtainable. Trade secrets, however, are difficult to protect. While we require employees, academic collaborators and consultants to enter into confidentiality agreements, we may not be able to adequately protect our trade secrets or other proprietary information or enforce these confidentiality agreements.

Our collaborators, strategic partners, and scientific advisors have rights to publish data and information in which we may have rights. If we cannot maintain the confidentiality of our technology and other confidential information in connection with our collaborations and strategic partnerships, then we may not be able to receive patent protection or protect our proprietary information.

If we use biological and hazardous materials in a manner that causes injury or violates laws, we may be liable for damages.

Our research and development activities involve the controlled use of potentially harmful biological materials as well as hazardous materials, chemicals, and various radioactive compounds typically employed in molecular and cellular biology. We routinely use cells in culture and gene delivery vectors, and we employ small amounts of radioisotopes in trace experiments. Although we maintain up-to-date licensing and training programs, we cannot completely eliminate the risk of accidental contamination or injury from the use, storage, handling, or disposal of these materials. In the event of contamination or injury, we could be held liable for damages that result, and any liability could exceed our resources. We currently carry insurance covering certain claims arising from our use of these materials. However, if we are unable to maintain our insurance coverage at a reasonable cost and with adequate coverage, our insurance may not cover any liability that may arise. We are subject to federal, state, and local laws and regulations governing the use, storage, handling, and disposal of these materials and specified waste products. To date, we have not experienced significant costs in complying with regulations regarding the use of these materials.

Failure to attract, retain, and motivate skilled personnel and cultivate key academic collaborations will delay our product development programs and our research and development efforts.

Our success depends on our continued ability to attract, retain, and motivate highly qualified management and scientific personnel and our ability to develop and maintain important relationships with leading research and academic institutions and scientists. Competition for personnel and academic and other research collaborations is intense. We have experienced a rate of employee turnover that we believe is typical of emerging biotechnology companies. If we lose the services of personnel with the necessary skills, it could significantly impede the achievement of our research and development objectives. If we fail to negotiate additional acceptable collaborations with academic and other research institutions and scientists, or if our existing collaborations are unsuccessful, our ZFP Therapeutic development programs may be delayed or may not succeed.

Risks Relating to our Common Stock and Corporate Organization

Our stock price has been volatile and may continue to be volatile, which could result in substantial losses for investors.

During the three months ended March 31, 2014, the closing price our common stock price, as reported by the NASDAQ Global Select Market, ranged from a low of $13.25 to high of $23.86. During the fiscal year ended December 31, 2013, our common stock price fluctuated, ranging from a low of $6.15 to a high of $14.38. Volatility in our common stock could cause stockholders to incur substantial losses. An active public market for our common stock may not be sustained, and the market price of our common stock may continue to be highly volatile. The market price of our common stock has fluctuated significantly in response to various factors, some of which are beyond our control, including but not limited to the following:

- announcements by us or collaborators providing updates on the progress or development status of ZFP Therapeutics;

- data from clinical trials;
- initiation or termination of clinical trials;
- changes in market valuations of similar companies;
- overall market and economic conditions including the equity markets for emerging biotechnology companies;
- deviations in our results of operations from the guidance given by us;
- announcements by us or our competitors of new or enhanced products, technologies or services or significant contracts, acquisitions, strategic relationships, joint ventures or capital commitments;
- regulatory developments;
- additions or departures of key personnel;
- future sales of our common stock or other securities by us, management or directors, liquidation of institutional funds that comprised large holdings of our stock;
- decreases in our cash balances; and
- changes, by one or more of Sangamo's security analysts, in recommendations, ratings or coverage of our stock.

Our stock price is also influenced by public perception of gene therapy and government regulation of potential products.

Reports of serious adverse events in a retroviral gene transfer trial for infants with X-linked severe combined immunodeficiency (X-linked SCID) in France and subsequent FDA actions putting related trials on hold in the United States had a significant negative impact on the public perception and stock price of certain companies involved in gene therapy. Stock prices of these companies declined whether or not the specific company was involved with retroviral gene transfer for the treatment of infants with X-linked SCID, or whether the specific company's clinical trials were placed on hold in connection with these events. Other potential adverse events in the field of gene therapy may occur in the future that could result in greater governmental regulation of our potential products and potential regulatory delays relating to the testing or approval of our potential products. These external events may have a negative impact on public perception of our business, which could cause our stock price to decline.

Anti-takeover provisions in our certificate of incorporation and Delaware law could make an acquisition of the Company more difficult and could prevent attempts by our stockholders to remove or replace current management.

Anti-takeover provisions of Delaware law and in our certificate of incorporation and our bylaws may discourage, delay or prevent a change in control of our company, even if a change in control would be beneficial to our stockholders. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. In particular, under our certificate of incorporation our board of directors may issue up to 5,000,000 shares of preferred stock with rights and privileges that might be senior to our common stock, without the consent of the holders of the common stock. Moreover, without any further vote or action on the part of the stockholders, the board of directors would have the authority to determine the price, rights, preferences, privileges, and restrictions of the preferred stock. This preferred stock, if it is ever issued, may have preference over, and harm the rights of, the holders of common stock. Although the issuance of this preferred stock would provide us with flexibility in connection with possible acquisitions and other corporate purposes, this issuance may make it more difficult for a third party to acquire a majority of our outstanding voting stock.

Similarly, our authorized but unissued common stock is available for future issuance without stockholder approval.

In addition, our bylaws:

- state that stockholders may not act by written consent but only at a stockholders' meeting;
- establish advance notice requirements for nominations for election to the board of directors or proposing matters that can be acted upon at stockholders' meetings; and
- prohibit stockholders from calling a special meeting of stockholders.

We are also subject to Section 203 of the Delaware General Corporation Law, which provides, subject to certain exceptions, that if a person acquires 15% of our voting stock, the person is an "interested stockholder" and may not engage in "business combinations" with us for a period of three years from the time the person acquired 15% or more or our voting stock.

ITEM 6. EXHIBITS

(a) Exhibits:

10.1†	Global Research, Development and Commercialization Collaboration and License Agreement between Sangamo BioSciences, Inc. and Biogen Idec Ma Inc. dated as of January 8, 2014
10.2	Amendment of 2013 Stock Incentive Plan on Reduction of Share Reserve
10.3	Ninth Amendment dated as of March 14, 2014 to License Agreement between Sangamo BioSciences, Inc. and Massachusetts Institute of Technology dated May 9, 1996
31.1	Rule 13a — 14(a) Certification by President and Chief Executive Officer
31.2	Rule 13a — 14(a) Certification by Principal Financial and Accounting Officer
32.1	Certification Pursuant to 18 U.S.C. Section 1350
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

† *Confidential treatment has been requested for certain information contained in this document. Such information has been omitted and filed separately with the Securities and Exchange Commission.*

SIGNATURES

Pursuant to the requirements of the Securities and Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Dated: May 7, 2014

SANGAMO BIOSCIENCES, INC.

/s/ H. WARD WOLFF

H. Ward Wolff
Executive Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 10.1

NOTE: Portions of this Exhibit are the subject of a Confidential Treatment Request by the Registrant to the Securities and Exchange Commission (the "Commission"). Such portions have been redacted and are marked with a "[***]" in the place of the redacted language. The redacted information has been filed separately with the Commission.

GLOBAL RESEARCH, DEVELOPMENT AND COMMERCIALIZATION COLLABORATION AND LICENSE AGREEMENT

This Global Research, Development and Commercialization Collaboration and License Agreement (this "*Agreement*"), is entered into as of January 8, 2014 (the "*Execution Date*"), by and between Sangamo BioSciences, Inc., a company organized under the laws of Delaware and having a place of business at 501 Canal Blvd., Suite A100, Richmond, CA 94804 ("*Sangamo*"), and Biogen Idec Ma Inc., a Massachusetts corporation having a place of business at 14 Cambridge Center, Cambridge, MA 02142 ("*Biogen Idec*", and each of Biogen Idec and Sangamo, a "*Party*" or collectively the "*Parties*").

RECITALS

WHEREAS, Biogen Idec is a biopharmaceutical company with expertise in developing and commercializing therapies for human disorders.

WHEREAS, Sangamo has technology and expertise in the development of the Core Technology (as defined below) and certain other technology used for therapeutic purposes.

WHEREAS, Sangamo and Biogen Idec desire to collaborate to discover, develop, seek regulatory approval for and, if successful, commercialize products and processes employing the Core Technology for preventing, diagnosing and treating diseases including beta thalassemia and sickle cell disease.

WHEREAS, Sangamo is willing to grant a license of certain of its technology to Biogen Idec to Research, clinically develop and commercialize such products and processes, and Biogen Idec wishes to obtain such a license on the terms of this Agreement.

NOW THEREFORE, in consideration of the foregoing premises and the mutual covenants set forth below, the Parties agree as follows:

1 DEFINITIONS

For purposes of this Agreement, the terms set forth in this Article 1 shall have the respective meanings set forth below:

1.1 "*Affiliate*" means, with respect to any person or entity, any other person or entity that controls, is controlled by, or is under common control with, such person or entity. For purposes of this Agreement, a person or entity shall be deemed to control an entity if it owns or controls, directly or indirectly, at least fifty percent (50%) of the equity securities of the subject entity entitled to vote in the election of directors (or, in the case of an entity that is not a corporation, for the election of the corresponding managing authority), or otherwise has the power to direct the management and policies of such other entity. The Parties acknowledge that in the case of certain entities organized under the laws of certain countries outside the United

States, the maximum percentage ownership permitted by law for a foreign investor may be less than fifty (50%), and that in such case such lower percentage will be substituted in the preceding sentence, provided that such foreign investor has the power to direct the affairs or management and policies of such entity.

1.2 "*Appointing Party*" shall have the meaning set forth in Section 3.1(c).

1.3 "*Biogen Idec*" shall have the meaning set forth in the introduction to this Agreement.

1.4 "*Biogen Idec Indemnified Party*" shall have the meaning set forth in Section 11.1.

1.5 "*Biogen Idec Licensed IP*" shall have the meaning set forth in Section 14.8(a)(iv)(B).

1.6 "*Biogen Idec Patents*" means Patent Rights Controlled by Biogen Idec or its Affiliates as of the Effective Date or that come into the Control of Biogen Idec or its Affiliates after the Effective Date and during the Term (other than through the grant of a license by Sangamo hereunder) that are necessary or useful for Sangamo to conduct its activities under the Research Programs.

1.7 "*Biogen Idec Withholding Tax Action*" shall have the meaning set forth in Section 8.9(b).

1.8 "*BLA*" shall have the meaning set forth in Section 1.96.

1.9 "*Broad License*" shall have the meaning set forth in Section 9.4(c)(i).

1.10 "*BT Back-up Candidate*" shall have the meaning set forth in Section 1.86.

1.11 "*BT Development Plan*" shall have the meaning set forth in Section 1.134.

1.12 "*BT External Activity*" means an activity under the BT Development Plan that is separately itemized as an external expense in the budget for the BT Program.

1.13 "*BT Program*" shall have the meaning set forth in Section 1.135.

1.14 "*BT Research Term*" shall have the meaning set forth in Section 1.136.

1.15 "*BT Step-in Date*" shall have the meaning set forth in Section 2.13(a).

1.16 "*BT Trigger Date*" means the earliest of (a) [***], (b) [***] and (c) [***].

1.17 "*Calendar Quarter*" means the respective periods of three (3) consecutive calendar months ending on March 31, June 30, September 30 or December 31, for so long as this Agreement is in effect.

1.18 "*CDA*" shall have the meaning set forth in Section 1.32.

1.19 "*cGMP*" means current Good Manufacturing Practices as specified in the United States Code of Federal Regulations, ICH Guideline Q7A, or equivalent laws, rules, or regulations of an applicable regulatory authority at the time of manufacture.

1.20 "*Change of Control*" means, with respect to a Party, (a) a merger or consolidation of such Party with a Third Party that results in the voting securities of such Party outstanding immediately prior thereto, or any securities into which such voting securities have been converted or exchanged, ceasing to represent at least fifty percent (50%) of the combined voting power of the surviving entity or the parent of the surviving entity immediately after such merger or consolidation, or (b) a transaction or series of related transactions in which a Third Party, together with its Affiliates, becomes the beneficial owner of fifty percent (50%) or more of the combined voting power of the outstanding securities of such Party, or (c) the sale or other transfer to a Third Party of all or substantially all of such Party's business to which the subject matter of this Agreement relates.

1.21 *"CIRM"* means the California Institute of Regenerative Medicine.

1.22 "*CIRM Award*" means the Strategic Partnership II Award from CIRM issued to Sangamo on November 21, 2013 and identified as grant number SP2-06902.

1.23 "*Clinical Development Plan*" means a description and timeline of the specific activities to be performed by Biogen Idec to develop, after assuming such responsibilities from Sangamo, a particular Licensed Product through the first Marketing Approval.

1.24 [***]

1.25 "*Collaboration Cell*" means any cell described in clauses (c) or (d) of the definition of Collaboration Composition of Matter in Section 1.26.

1.26 "*Collaboration Composition of Matter*" means any of the following:

(a) a DNA-Binding Molecule that:

(i) Specifically Binds to a Type A Gene Target,

(ii) Specifically Binds to a Type B Gene Target and thereby causes the Correction of such Gene Target at its native locus,

(iii) Specifically Binds to a sequence within a Safe Harbor Locus and thereby causes the insertion of a functional copy of a Type B Gene Target (or functional portion thereof) at such Safe Harbor Locus (without inserting any Gene other than the Type B Gene Target), or

(iv) Specifically Binds to a Type C Gene Target,

and in each case (i) – (iv) does not directly affect, in a manner that is preclinically or clinically significant (as reasonably determined by Sangamo in the course of performing work pursuant to a Research and Development Plan or pursuant to Section 2.12; which determination shall be reported to the JSC, based upon data that is shared with the JSC), any Gene other than such Gene Target or Safe Harbor Locus, as applicable, to which such DNA-Binding Molecule Specifically Binds;

(b) a molecule or vector that encodes a DNA-Binding Molecule described in

(a) but does not encode any other molecules that bind DNA;

(c) a cell arising from a CD34+ or other HSPC preparation, the DNA of which cell is modified *ex vivo* through the action of a DNA-Binding Molecule described in (a) of this Section 1.26 but not any other non-endogenous molecule that binds DNA; or

(d) a cell that is a descendent (whether direct or indirect) or a partially or fully differentiated form of a cell described in (c) of this Section 1.26 and does not contain any DNA modification or gene expression modification resulting from the action of any non-endogenous molecule that binds DNA other than a DNA-Binding Molecule described in (a) of this Section 1.26.

For the avoidance of doubt, Collaboration Composition of Matter includes the DNA-Binding Molecules described in (x) [***], which are attached hereto as Schedule 1.26. As used in Schedule 1.26, "TALEN" means a TALE nuclease (i.e., a TALE Protein Operably Linked to a Functional Domain that is a nuclease).

1.27 "*Combination Product*" shall have the meaning set forth in Section 1.109.

1.28 "*Commercially Reasonable Efforts*" means:

(a) in the case of Sangamo, the efforts and resources typically used by biotechnology companies similar in size and scope to Sangamo to perform the obligation at issue;

(b) in the case of Biogen Idec, the efforts and resources typically used by Biogen Idec and its Affiliates to perform the obligation at issue;

in each case, which efforts shall not be less than those efforts made with respect to other products at a similar stage of development or in a similar stage of product life, with similar developmental risk profiles, of similar market and commercial potential, taking into account the competitiveness of the market place, the proprietary position of the products, the regulatory structure involved, regulatory authority-approved labeling, product profile, the profitability of the applicable products (taking into account payments to Sangamo under this Agreement), issues of safety and efficacy, the likely timing of the product's entry into the market, the likelihood of receiving Marketing Approval and other relevant scientific, technical and commercial factors. Commercially Reasonable Efforts requires that the Party: (i) promptly assign responsibility for such obligation to specific employee(s) who are held accountable for progress and monitor such progress on an ongoing basis, (ii) set and seek to achieve specific and meaningful objectives for carrying out such obligation, and (iii) make and implement decisions and allocate resources designed to advance progress with respect to such objectives.

1.29 "*Competing Business Combination*" shall have the meaning set forth in Section 6.3(d).

1.30 "*Competing* [***] *Program*" shall have the meaning set forth in Section 6.3(e)(i).

1.31 "*Competing Program*" shall have the meaning set forth in Section 6.3(c).

1.32 "*Confidential Information*" means all Know-How and other proprietary information (including information about any element of a Party's technology or business) that is disclosed by a Party or its Affiliates or by any of the Party's or its Affiliates' employees or consultants (the "*Disclosing Party*") to the other Party or its Affiliates or to any of the other Party's or its Affiliates' employees, consultants or Subcontractors (the "*Receiving Party*") except to the extent that the information: (a) as of the date of disclosure is demonstrably known to the Receiving Party, as shown by written documentation, other than by virtue of a prior confidential disclosure by the Disclosing Party, (b) as of the date of disclosure is in, or subsequently enters, the public domain, through no fault or omission of the Receiving Party, (c) as of the date of disclosure or thereafter is lawfully obtained by the Receiving Party from a Third Party free from any obligation of confidentiality to the Disclosing Party or (d) is independently discovered or developed by or on behalf of the Receiving Party without the use of any Confidential Information belonging to the Disclosing Party. Unless otherwise provided herein, (i) all data generated by either Party or its Affiliates or by any of the Party's or its Affiliates' employees, consultants, or Subcontractors under this Agreement shall deemed to be the Confidential Information of Biogen Idec, other than such data generated by Sangamo or its Affiliates' employees, consultants, or Subcontractors relating solely to the Core Technology, which shall be deemed to be the Confidential Information of Sangamo, (ii) Joint Technology shall be deemed to be Confidential Information of each Party, with each Party deemed to be the Receiving Party of such Confidential Information and (iii) the terms and conditions of this Agreement shall be considered Confidential Information of each Party, with each Party deemed to be the Receiving Party of such Confidential Information. In addition, all confidential Know-How disclosed by either Party or its Affiliates pursuant to that certain Mutual Confidentiality Agreement between Biogen Idec, Inc., an Affiliate of Biogen Idec, and Sangamo dated May 21, 2013 (the "*CDA*") shall be deemed to be the disclosing Party's Confidential Information hereunder (with the mutual understanding and agreement that any use or disclosure thereof that is authorized under Article 10 shall not be restricted by, or be deemed a violation of, the CDA).

1.33 "*Control*" or "*Controlled*" means the possession of the ability to grant a license or sublicense of, or access to, Patent Rights, Know-How, or other tangible or intangible rights as provided for herein, other than pursuant to a license granted under this Agreement, without violating the terms of any agreement or arrangement with any Third Party. Notwithstanding anything in this Agreement to the contrary, a Party shall be deemed to not Control any Patent Rights or Know-How that are owned or controlled by a Third Party described in the definition of "Change of Control", or such Third Party's Affiliates, (a) prior to the closing of such Change of Control, except to the extent that any such Patent Rights or Know-How were developed prior to such Change of Control through the use of such Party's technology, or (b) after such Change of Control to the extent that such Patent Rights or Know-How are developed or conceived by such Third Party or its Affiliates (other than such Party) after such Change of Control without using or incorporating such Party's technology.

1.34 "*Co-Promotion Agreement*" shall have the meaning set forth in Section 4.5(a).

1.35 "*Co-Promotion Option*" shall have the meaning set forth in Section 4.5(a).

1.36 "*Co-Promotion Product*" shall have the meaning set forth in Section 4.5(a).

1.37 "*Core IP*" means, subject to Section 9.1(d), all Patent Rights Controlled by a Party or an Affiliate thereof as of the Execution Date or during the Term that claim:

(a) a method for (i) [***] or changing [***] making [***], making or using [***] that connects [***], making or using a [***] in connection with [***]

(b) a method for using zinc finger technology to: (i) perform methods [***], (ii) perform methods of [***] (iii) [***] (iv) make [***] (v) make [***]

(c) a composition that consists of or comprises any of the following or a portion thereof: (i) a [***] (ii) a library of [***]

Schedule 1.37 sets forth the Licensed Patents that are Core IP as of the Execution Date, and will be updated, through coordination by the Patent Affairs Representatives, on or prior to the Schedule Revision Date to include additional Licensed Patents filed between the Execution Date and the Schedule Revision Date that are Core IP as of the Effective Date, if any.

1.38 "*Core Technology*" shall mean, collectively, the Patent Rights claiming, and Know-How relating to, the methods or compositions described in clauses (a)-(c) of Section 1.37, which Patent Rights and Know-How Sangamo or any of its Affiliates Controls as of the Effective Date or that come into the Control of Sangamo or any of its Affiliates during the Term.

1.39 "*Correct*" means, with respect to a Gene, to alter the nucleic acid sequence of such Gene so that it encodes the protein product that is expressed by the wild-type allele of such Gene (or by a naturally-occurring variant of such wild-type allele that encodes a protein product that functions in a manner that is equivalent or superior to the protein product expressed by the wild-type allele). "*Correction*" shall have a correlative meaning.

1.40 "*CRISPR/Cas system*" (including all individual components thereof) means a system comprising a CRISPR (clustered regularly interspaced short palindromic repeats) guide RNA and a vector encoding a Cas (CRISPR-associated) nuclease. Non-limiting examples of CRISPR, Cas, and the CRISPR/Cas system can be found in [***] as well as references cited in Schedule 1.26.

1.41 "*Disclosing Party*" shall have the meaning set forth in Section 1.32.

1.42 "*DNA-Binding Molecule*" means a nucleic acid-binding protein that Specifically Binds a Gene Target or Safe Harbor Locus, including: (a) a Zinc Finger Protein that Specifically Binds a Gene Target or Safe Harbor Locus, (b) a TALE Protein that Specifically Binds a Gene Target or Safe Harbor Locus or (c) the components of a CRISPR/Cas system that Specifically Binds a Gene Target or Safe Harbor Locus, which protein or component(s) of the foregoing clauses (a)-(c) may be Operably Linked to (and thereby include) (i) a wild-type nuclease cleavage domain or other naturally or non-naturally occuring nuclease, (ii) a recombinant nuclease

cleavage domain or half-domain or (iii) a transcription enhancer or repressor domain (each of (i), (ii) and (iii), a "*Functional Domain*"). In this Section 1.42, the terms "wild-type nuclease cleavage domain", "nuclease" (including naturally and non-naturally occuring nuclease) and "recombinant nuclease cleavage domain or half domain" shall have the same meaning as those terms are defined, used and/or exemplified in [***].

1.43 "*DOJ*" shall have the meaning set forth in Section 13.1.

1.44 "*Earned Royalties*" shall have the meaning set forth in Section 8.4.

1.45 "*Effect*" shall have the meaning set forth in Section 1.97.

1.46 "*Effective Date*" means the third day following the Schedule Revision Date ; provided that Biogen Idec has not terminated this Agreement pursuant to Section 14.3 prior to the third day following the Schedule Revision Date.

1.47 "*Excluded Agreements"* shall have the meaning set forth in Section 1.49.

1.48 "*Execution Date*" shall have the meaning set forth in the introduction to this Agreement.

1.49 "*Existing Third Party License*" means (a) an agreement (other than the License Agreement between Sangamo and [***], as amended, the License Agreement between Sangamo and [***], as amended, the Patent License Agreement between the [***], as amended, the Patent License Agreement between the National Institutes of Health and Sangamo dated April 25, 2012, and the Non-Exclusive Patent License Agreement between the [***] (collectively, the "*Excluded Agreements*")) entered into by Sangamo with a Third Party prior to the Execution Date, including any amendments thereto as of the Execution Date, pursuant to which such Third Party granted Sangamo a license to Patent Rights or Know-How that are Controlled by Sangamo or its Affiliates as of the Execution Date and that are necessary [***] to Research, develop, manufacture, commercialize, market, import, export, sell or offer for sale or otherwise use a Licensed Product for any purpose in the Field and (b) any license deemed to be an Existing Third Party License pursuant to Section 9.4(f). All Existing Third Party Licenses as of the Execution Date are listed on Schedule 1.49(a). Biogen Idec understands and acknowledges that the license granted to Biogen Idec under Section 6.1(a) does not include a sublicense of any licenses received by Sangamo under the Excluded Agreements. Schedule 1.49(b) lists those agreements as of the Execution Date (other than reagent or label licenses obtained in connection with purchases of reagents or supplies) pursuant to which a Third Party granted Sangamo a license to Patent Rights or Know-How that are not Controlled by Sangamo or its Affiliates but that would, if Controlled by Sangamo or its Affiliates, be within the definition of Licensed Technology.

1.50 "*FDA*" means the Food and Drug Administration of the United States, or the successor thereto.

1.51 "*Field*" means the diagnosis, treatment or prevention of disease in humans or animals in any and all indications.

1.52 "*First Commercial Sale*" means, with respect to a particular Licensed Product and country, the first Net Sales in such country of such Licensed Product after Marketing Approval of such Licensed Product in such country.

1.53 "*First in Human Trial*" means the first human clinical trial of a Licensed Product in the BT Program at sites to be mutually agreed upon by the Parties, as described in the BT Development Plan.

1.54 "*FTC*" shall have the meaning set forth in Section 13.1.

1.55 "*FTE*" means a full time equivalent scientific, regulatory, CMC or other similarly qualified person, working for a minimum of a total of [***] or [***] hours per year of scientific or other such qualified work and who is an employee of Sangamo working on a Research Program, including recording and writing up results, reviewing literature and references, holding scientific discussions, and managing and leading scientific staff to the extent that such management and leading is directed to any work on, directly related to or in support of a Research Program. In the case that any individual works partially on a Research Program and partially on other work in a given year, then the full-time equivalent to be attributed to such individual's work hereunder shall be equal to the percentage of such individual's total work time in such year that such individual spent working on a Research Program. In no event shall any one individual be counted as more than one (1) FTE.

1.56 "*FTE Rate*" shall have the meaning set forth in Section 2.7(c).

1.57 "*Functional Domain*" shall have the meaning set forth in Section 1.42.

1.58 "*GCP*" means the then current standards for clinical trials for pharmaceuticals, as set forth in the United States Food, Drug and Cosmetic Act, as amended from time to time or other applicable law, and such standards of good clinical practice as are required by the regulatory authorities of the European Union and other organizations and governmental authorities in countries for which the applicable Licensed Product is intended to be developed, to the extent such standards are not less stringent than United States GCP.

1.59 "*Gene*" means a human or animal gene, including all naturally occurring mutants or allelic variants of such gene, and including coding, non-coding and regulatory regions thereof.

1.60 "*Gene Target*" means any one of the following Genes, in each case including any naturally occurring mutant or allelic variant thereof, as well as all coding, non-coding and regulatory regions thereof:

(a) [***] a "*Type A Gene Target*"); or

(b) [***] (a "*Type B Gene Target*"); or

(c) [***], a "*Type C Gene Target*").

*** CONFIDENTIAL PORTIONS OMITTED AND FILED SEPARATELY WITH THE COMMISSION

1.61 "*Generic Product*" means, with respect to a particular Licensed Product in a particular country, a product on the market in such country commercialized by any Third Party that is not a Sublicensee of Biogen Idec or its Affiliates and that did not purchase such product in a chain of distribution that included any of Biogen Idec or its Affiliates or Sublicensees, that (a) is approved by the applicable regulatory authority, under any then-existing laws and regulations in the applicable country pertaining to approval of "generic" or "biosimilar" biologic products, as a "generic" or "biosimilar" version of such Licensed Product, which approval uses such Licensed Product as a reference product and relies on or references information in the MAA, NDA or BLA, as applicable for such Licensed Product; (b) is otherwise recognized by the applicable regulatory authority as a biosimilar or interchangeable product to such Licensed Product; or (c) is a cellular product manufactured using a Zinc Finger Protein or TALE Protein, [***], then a CRISPR/Cas system, in each case which cellular product is approved in such country or prescribed by physicians for an indication that is substantially the same as the indication for which such Licensed Product is approved.

1.62 "*Genus Patent*" shall have the meaning set forth in Section 9.2(b)(iii)(B).

1.63 "*GLP*" means the then-current good laboratory practice standards promulgated or endorsed by the FDA as defined in 21 C.F.R. Part 58 or the successor thereto, or comparable regulatory standards in jurisdictions outside the United States.

1.64 "*Gross Sales*" shall have the meaning set forth in Section 1.109.

1.65 "*HLA Composition of Matter*" means:

(a) a nucleic acid-binding protein that is designed to bind specifically (and not Specifically Bind) an [***] Gene and thereby cause the deletion or inactivation of such Gene,

(b) a molecule or vector that encodes the protein defined in (a) of this Section 1.65,

(c) a cell arising from a CD34+ or other HSPC cell preparation, the DNA of which cell is modified *ex vivo* through the action of a protein described in (a) of this Section 1.65, or

(d) a cell that is a descendent (whether direct or indirect) or a partially or fully differentiated form of the cell described in (c) of this Section 1.65.

1.66 "[***] *ROFN Exercise Notice*" shall have the meaning set forth in Section 6.3(e)(iii).

1.67 "[***] *ROFN Exercise Period*" shall have the meaning set forth in Section 6.3(e)(iii).

1.68 "[***] *ROFN Notice*" shall have the meaning set forth in Section 6.3(e)(iii).

1.69 "[***] *Updates*" shall have the meaning set forth in Section 6.3(e)(i).

1.70 "*HSPCs*" shall have the meaning set forth in Section 1.88.

1.71 "*HSR Act*" means the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and the rules and regulations promulgated thereunder.

1.72 "*HSR Clearance*" means all applicable waiting periods under the HSR Act with respect to the transactions contemplated under this Agreement have expired or have been terminated.

1.73 "*HSR Clearance Date*" means the earliest date on which the Parties have actual knowledge that all applicable waiting periods under the HSR Act with respect to the transactions contemplated under this Agreement have expired or have been terminated.

1.74 "*HSR Filing*" means filings by Biogen Idec and Sangamo with the United States Federal Trade Commission and the Antitrust Division of the United States Department of Justice of a Notification and Report Form for Certain Mergers and Acquisitions (as that term is defined in the HSR Act) with respect to the matters set forth in this Agreement, together with all required documentary attachments thereto.

1.75 "*IND*" means an investigational new drug application or non-U.S. equivalent thereof required to be filed with the FDA or other applicable regulatory authority to commence a Phase I Clinical Trial.

1.76 "*Indemnitee*" shall have the meaning set forth in Section 11.3.

1.77 "*Indemnitor*" shall have the meaning set forth in Section 11.3.

1.78 "*Infringement*" shall have the meaning set forth in Section 9.3(a).

1.79 "*Initial BT Lead Candidate*" shall have the meaning set forth in Section 1.86.

1.80 "*Initial Subject Matter*" shall have the meaning set forth in Section 7.2(d).

1.81 "*Joint Know-How"* means Know-How that is conceived, discovered, invented, created, made or reduced to practice or tangible medium jointly by at least one employee of each of the Parties, their Affiliates, or their Subcontractors during the course of performing activities under this Agreement. For the avoidance of doubt, Joint Know-How does not include Patent Rights.

1.82 "*Joint Patent*" means any Patent Right claiming Joint Know-How with at least one inventor from each of Biogen Idec and Sangamo (or their respective Affiliates or Subcontractors), with inventorship determined according to U.S. patent laws.

1.83 "*Joint Steering Committee*" or "*JSC*" means the joint steering committee comprised of representatives of Biogen Idec and Sangamo described in Article 3.

1.84 "*Joint Technology*" means the Joint Know-How and the Joint Patents.

1.85 "*Know-How*" means intellectual property, data, results, pre-clinical and clinical protocols and study data, chemical structures, chemical sequences, information, materials, compounds, inventions, know-how, formulas, trade secrets, techniques, methods, processes, procedures and developments; except that Know-How does not include Patent Rights claiming the foregoing.

1.86 "*Lead Candidate*" shall mean, with respect to the Research Program conducted under the BT Development Plan, the Collaboration Composition of Matter identified in Schedule 1.86 as the lead candidate (such Lead Candidate, the "*Initial BT Lead Candidate*") and, with respect to the Research Program conducted under the SCD Development Plan, the Collaboration Composition of Matter selected for use in the creation of a Licensed Product that is evaluated in IND-enabling studies under the SCD Development Plan. Schedule 1.86 also sets forth as of the Execution Date a back-up candidate Collaboration Composition of Matter for the BT Program (such back-up candidate, the "*BT Back-Up Candidate*").

1.87 "*Liabilities*" shall have the meaning set forth in Section 11.1.

1.88 "*Licensed Know-How*" means any Know-How Controlled by Sangamo or its Affiliates as of the Effective Date or during the Term (other than through the grant of a license by Biogen Idec hereunder), including Sangamo's interest in Joint Know-How, that is necessary [***] to Research, develop, manufacture, commercialize, market, import, export, sell or offer for sale or otherwise use a Licensed Product for any purpose in the Field, including any such Know-How covering or relating to: (a) methods for obtaining unmodified hematopoietic stem and progenitor cells ("*HSPCs*") from a subject, including procedures for purifying, storing, propagating or transporting such cells, (b) methods for modifying the HSPCs *ex vivo*, including techniques for purifying, propagating, storing or transporting the modified HSPCs, (c) methods for making and using (but not designing or optimizing) DNA-Binding Molecules and molecules or vectors encoding such DNA-Binding Molecules for use in modifying the HSPCs *ex vivo* by Specifically Binding to a Gene Target or Safe Harbor Locus, (d) methods for testing, assaying and characterizing HSPCs, mRNAs and cell banks, (e) procedures for manipulating, storing, purifying, propagating or using such modified HSPCs and all progeny and differentiated forms thereof, (f) techniques for administering such modified HSPCs or progeny or differentiated forms thereof to subjects, (g) a method for isolating, manipulating, propagating and/or storing CD34+ cells obtained from a human or animal subject and (h) any methods for detecting such CD34+ cells or HSPCs in the subjects after administration. For clarity, Licensed Know-How

excludes Know-How related to the design and optimization of any nucleic acid-binding protein, including any Zinc Finger Protein, TALE Protein or CRISPR/Cas system. Notwithstanding anything in this Agreement to the contrary, the Licensed Know-How shall not include any Know-How licensed to Sangamo or its Affiliates by a Third Party unless such Know-How is licensed pursuant to a Third Party License.

1.89 "*Licensed Patents*" means all Patent Rights Controlled by Sangamo or its Affiliates as of the Execution Date, as of the Effective Date or during the Term (other than through the grant of a license by Biogen Idec hereunder), including Sangamo's interest in the Joint Patents, that (a) claim the composition of a Collaboration Composition of Matter, its manufacture or its use in the Field or (b) are necessary [***] to Research, develop, manufacture, commercialize, market, import, export, sell or offer for sale Licensed Products in the Field. Notwithstanding anything in this Agreement to the contrary, the Licensed Patents shall not include any Patent Rights licensed to Sangamo or its Affiliates by a Third Party unless such Patent Rights are licensed pursuant to a Third Party License.

1.90 "*Licensed Product*" means any

(a) product for use in the Field that incorporates one or more Collaboration Cells, alone or in combination with other active or inactive components or ingredients or methods (provided that such other components, ingredients and methods do not use or incorporate, and were not made using, any Know-How Controlled by Sangamo, and whose composition, manufacture or use is not claimed by any Patent Right Controlled by Sangamo), or

(b) service in the Field that uses or involves the creation of one or more Collaboration Cells, alone or in combination with other active or inactive components or ingredients or methods (provided that such other components, ingredients and methods do not use or incorporate, and were not made using, any Know-How Controlled by Sangamo, and whose composition, manufacture or use is not claimed by any Patent Right Controlled by Sangamo), in each case (a) and (b) wherein (i) such product, service or Collaboration Cell or any Collaboration Composition of Matter used (whether directly or indirectly) with respect thereto embodies, uses, was made through the use of, or is derived from Know-How Controlled by Sangamo or generated in the course of activities under this Agreement or (ii) the composition of matter, manufacture or use of such product, service or Collaboration Cell or any Collaboration Composition of Matter used (whether directly or indirectly) with respect thereto is disclosed or claimed in a Patent Right Controlled by Sangamo on the Effective Date or during the Term or a Patent Right that claims Know-How generated in the course of activities under this Agreement.

1.91 "*Licensed Technology*" means all Licensed Know-How and Licensed Patents.

1.92 "*MAA*" shall have the meaning set forth in Section 1.96.

1.93 "*MAA BT Milestone Payment*" shall have the meaning set forth in Section 8.3(a).

1.94 "*MAA SCD Milestone Payment*" shall have the meaning set forth in Section 8.3(a).

1.95 "*Major European Country*" means [***]

1.96 "*Marketing Approval*" means, with respect to a particular country or territory, the approval of a new drug application ("*NDA*"), biologic license application ("*BLA*"), marketing authorization application ("*MAA*") or similar approval required to sell or market a Licensed Product in such country or territory, including, where required by applicable law, pricing and reimbursement approval and schedule classifications.

1.97 "*Material Adverse Event"* shall mean, with respect to Sangamo, an event, occurrence, development or change (a) that (i) occurs after the Execution Date and prior to or on the HSR Clearance Date and (ii) is reflected in any disclosure schedule delivered to Biogen Idec pursuant to the proviso in the first sentence of Section 7.2 after the Execution Date and within three (3) days following the HSR Clearance Date (each event, occurrence, development or change that satisfies the criteria in both (i) and (ii), an "*Effect*") and (b) that, individually or when taken together with all other Effects, has or would reasonably be expected to have a material adverse effect on the [***] taken as a whole, the Parties' practice of the [***] taken as a whole and as contemplated by this Agreement or the [***] as contemplated by this Agreement, except for any Effect resulting from (1) any change in applicable law, rules or regulations or the interpretation thereof other than any change in regulations promulgated by the FDA or any change in the interpretation of any regulation promulgated by the FDA relating, in each such case, to the use of Zinc Finger Proteins in connection with any therapeutic product, (2) any event or change affecting the pharmaceutical industry that does not have a disproportionate effect on the practice of the Licensed Technology taken as a whole and as contemplated by this Agreement or the development, manufacture or commercialization of Licensed Products as contemplated by this Agreement, (3) any event or change affecting Biogen Idec, provided that such event or change is not caused by Sangamo, (4) announcement of entry into this Agreement, (5) any Third Party data or publication, provided that such data or publication did not arise from a collaboration with Sangamo, or (6) any development in the field of gene therapy as it relates to the treatment or prevention of beta thalassemia or sickle cell disease other than any such development that relates to the use of Zinc Finger Proteins in connection with any therapeutic product for the treatment or prevention of beta thalassemia or sickle cell disease.

1.98 "*Materials*" shall have the meaning set forth in Section 2.5(d).

1.99 "*Milestone Event*" shall have the meaning set forth in Section 8.3.

1.100 "*Milestone Payment*" shall have the meaning set forth in Section 8.3.

1.101 "*Milestone Reduction Event*" shall mean the occurrence of the following set of circumstances: the [***] and the applicable Licensed Product was created using a Collaboration Composition of Matter other than the Initial BT Lead Candidate or the BT Back-Up Candidate, provided that the Parties did not, within [***] after the Effective Date, decide to commence development under the BT Program of a Zinc Finger Protein that Specifically Binds the [***] and stop all development under the BT Program of a Zinc Finger Protein that Specifically Binds [***].

1.102 "*MIT Agreement*" means that certain Patent License Agreement between Sangamo and the Massachusetts Institute of Technology, dated May 9, 1996, as amended.

1.103 "*MRC*" means the Medical Research Council.

1.104 "*MRC Agreement*" means that certain Intellectual Property Agreement between Sangamo, as successor in interest to Gendaq Limited (formerly known as Endlock Limited), and the MRC, dated May 21, 1999.

1.105 "*Narrow License*" shall have the meaning set forth in Section 9.4(c)(i).

1.106 "*NDA*" shall have the meaning set forth in Section 1.96.

1.107 "*NDA/BLA BT Milestone Payment*" shall have the meaning set forth in Section 8.3(a).

1.108 "*NDA/BLA SCD Milestone Payment*" shall have the meaning set forth in Section 8.3(a).

1.109 "*Net Sales*" means, with respect to a Licensed Product in a country in the Territory, (1) the gross amount invoiced for sales of such Licensed Product in such country by Biogen Idec or any of its Affiliates or Sublicensees (except, to the extent they have been granted a Sublicense, any distributors engaged by Biogen Idec, its Affiliates or Sublicensees) to Third Parties ("*Gross Sales*"), and (2) the total amount received (whether characterized as royalty, profit share or otherwise) by Biogen Idec or any of its Affiliates from a Third Party distributor with respect to sales of such Licensed Product in such country by such distributor pursuant to distributor agreements under which such distributor pays to Biogen Idec a share of its sales of Licensed Product, less the following deductions, in each case (A) without duplication, (B) where applicable with respect to the Gross Sales invoiced, (C) as incurred in the ordinary course of business in type and amount consistent with good industry practice and (D) except with respect to the uncollectible amounts on any previously sold Licensed Product described in clause (b) below and the pharmaceutical excise taxes described in clause (d) below, as determined in accordance with, and as recorded in revenues under, United States Generally Accepted Accounting Principles ("*U.S. GAAP*"):

(a) sales returns and allowances actually paid, granted or accrued on the Licensed Product, including trade, quantity, prompt pay and cash discounts and any other adjustments, including those granted on account of price adjustments or billing errors;

(b) credits or allowances given or made for rejection or return of, and for uncollectible amounts on, a previously sold Licensed Product or for rebates or retroactive price reductions (including Medicare, Medicaid, managed care and similar types of rebates and chargebacks);

(c) to the extent not already deducted or excluded from the Gross Sales invoiced, taxes, duties or other governmental charges levied on or measured by the billing amount for the Licensed Product, as adjusted for rebates and refunds, which, for the avoidance of doubt, shall not include any tax, duty, or other charge imposed on or measured by net income (however denominated), or any franchise taxes, branch profits taxes, or similar tax;

(d) pharmaceutical excise taxes (such as those imposed by the United States Patient Protection and Affordable Care Act of 2010 (Pub. L. No. 111-48) and other comparable laws);

(e) charges for freight and insurance directly related to the distribution of the Licensed Product, to the extent not already deducted or excluded from the Gross Sales invoiced, for sales of the Licensed Product by Biogen Idec or its Affiliates or permitted Sublicensees to Third Parties in the Territory;

(f) credits for allowances given or made for wastage replacement for the Licensed Product;

(g) wholesaler and distributor administration fees; and

(h) other similar or customary deductions taken in the ordinary course of business or in accordance with U.S. GAAP.

Net Sales shall be determined in accordance with U.S. GAAP, except to the extent noted above in clause (D) of the first paragraph of this Section 1.109. Net Sales shall not be imputed to transfers of Licensed Product for use in any clinical trial, for bona fide charitable purposes, for compassionate use, for indigent patient programs or as free Licensed Product samples, so long as such transfers of Licensed Product for charitable purposes, compassionate use, indigent patient programs or as samples are consistent with Biogen Idec's practices with respect to Licensed Product prior to the Effective Date.

Notwithstanding the foregoing, in the event a Licensed Product is sold as a component of a Combination Product in any country in the Territory in any Calendar Quarter, Net Sales shall be calculated by multiplying the Net Sales of the Combination Product in such country during such Calendar Quarter (calculated by applying the formula set forth above as if it applied to sales of such Combination Product in such country) by the fraction A/(A+B), where A is the average Net Sales per unit sold of the Licensed Product when sold separately in such country during such Calendar Quarter (calculated by determining the Net Sales of the Licensed Product in such country during such Calendar Quarter in accordance with the formula set forth above and dividing such Net Sales by the number of units of the Licensed Product sold in such country during such Calendar Quarter) and B is the average Net Sales per unit sold of the other active component(s) included in the Combination Product when sold separately in such country during such Calendar Quarter (calculated by determining the Net Sales of such other active component(s) in such country during such Calendar Quarter by applying the formula set forth above as if it applied to sales of such other active component(s) and dividing such Net Sales by the number of units of such other active component(s) sold in such country during such Calendar Quarter). For purposes of calculating the average Net Sales per unit sold of a Licensed Product

and other active component(s) of a Combination Product in accordance with the above described equation, any of the deductions described in clauses (a) through (h) above that apply to such Combination Product shall be allocated among sales of the Licensed Product and sales of the other active component(s) included in such Combination Product as follows: (1) deductions that are attributable solely to the Licensed Product or one of the other active component(s) shall be allocated solely to Net Sales of the Licensed Product or such other active component, as applicable, and (2) all other deductions shall be allocated among sales of the Licensed Product and sales of the other active component(s) in proportion to Biogen Idec's reasonable good faith estimate of the fair market value of the Licensed Product and the other active component(s). In the event that no separate sales of the Licensed Product or any other active component(s) included in a Combination Product are made by Biogen Idec or its Affiliates, distributors or Third Party transferees during a Calendar Quarter in which such Combination Product is sold in a country, the average Net Sales per unit sold in the above described equation shall be replaced with Biogen Idec's reasonable good faith estimate of the fair market value of the Licensed Product and each of the other active component(s) included in such Combination Product. For purposes of this Section 1.109, "*Combination Product*" shall mean (x) any single product in finished form containing as active ingredients both (A) a Licensed Product and (B) one or more other pharmaceutically active compounds or substances that are not used to implement any Licensed Technology (for example, vectors encoding DNA-Binding Molecules or used to deliver Genes for use in connection with DNA-Binding Molecules, and compounds or substances for obtaining, processing and administering cells modified or to be modified by DNA-Binding Molecules, are not considered other pharmaceutically active compounds or substances); (y) any sale of a Licensed Product with another product(s) for a single invoice price; or (z) any sale of a Licensed Product as part of a bundle with other product(s) or service(s) (i.e., where a Licensed Product and such other product(s) or services are sold for a single invoice price or where a discount, rebate or other amount that reduces the price of a Licensed Product is provided in exchange for (or otherwise conditioned upon) the purchase of such other product(s) or services), to the extent not described in clause (x) or (y).

1.110 "*NIH*" shall have the meaning set forth in Section 9.4(g).

1.111 "*Notice Period*" shall have the meaning set forth in Section 14.6.

1.112 "*Operably Linked*" means with reference to a juxtaposition of two (2) or more components (such as sequence elements), in which the components are arranged such that both components function normally and allow the possibility that at least one of the components can mediate a function that is exerted upon at least one of the other components. [***] provide illustrative non-limiting examples of the term "*Operably Linked*". "*Operable Linkage*" shall have a correlative meaning.

1.113 "*Orphan Drug Designation*" means the FDA has granted a request for designation under Section 526 of the Federal Food, Drug, and Cosmetic Act as amended by section 2 of the Orphan Drug Act (sections 525-528 (21 U.S.C. 360aa-360dd)) or any grant of a corresponding designation by a corresponding regulatory authority outside of the United States.

1.114 "*Other IP***"** means, subject to Section 9.1(d), all Patent Rights Controlled by a Party or an Affiliate thereof as of the Execution Date or during the Term that claim:

(a) a method of [***]

(b) a method of [***]

(c) a method of[***]

(d) a method of [***]

(e) [***] a method described in any clause of this Section 1.114, or

(f) [***]

Schedule 1.114(B) sets forth the Licensed Patents that are Other IP as of the Execution Date, and will be updated, through coordination of the Patent Affairs Representatives, on or prior to the Schedule Revision Date to include additional Licensed Patents filed between the Execution Date and the Schedule Revision Date that are Other IP as of the Effective Date, if any.

1.115 "*Party*" and "*Parties*" shall have the meaning set forth in the introduction to this Agreement.

1.116 "*Patent Affairs Representative*" shall have the meaning set forth in Section 9.2(a).

1.117 "*Patent Rights*" means the rights and interests in and to issued patents and pending patent applications in any country, jurisdiction or region (including inventor's certificates and utility models), including all provisionals, non-provisionals, substitutions, continuations, continuations-in-part, divisionals, renewals and all patents granted thereon, and all reissues, reexaminations, extensions, confirmations, revalidations, registrations and patents of addition thereof, including supplementary protection certificates, PCTs, pediatric exclusivity periods and any foreign equivalents to any of the foregoing.

1.118 "*Phase I Clinical Trial*" means a human clinical trial of a Licensed Product according to 21 C.F.R. §312.21(a), as amended, or its equivalent, as appropriate, in foreign jurisdictions.

1.119 "*Phase I Completion*" means the delivery of the complete study report for the First in Human Trial.

1.120 "*Phase I/II Clinical Trial*" shall have the meaning set forth in Section 8.3(a)(i).

1.121 "*Phase II BT Milestone Payment*" shall have the meaning set forth in Section 8.3(a).

1.122 "*Phase II Clinical Trial*" means each of (a) human clinical trial of a Licensed Product according to 21 C.F.R. §312.21(b), as amended, or its equivalent, as appropriate, in foreign jurisdictions and (b) a Phase I Clinical Trial that is subsequently optimized or expanded and thereby meets the applicable Phase II Milestone Criteria.

1.123 "*Phase II Milestone Criteria*" means a Phase I Clinical Trial that (a) includes optimization of the conditioning regimen by evaluating a less intense conditioning regimen, (b) is expanded in geography for the sole purpose of enabling a global Pivotal Clinical Trial, (c) is expanded in target population to enable a global Pivotal Clinical Trial or (d) the Parties mutually agree to increase the size of such Phase I Clinical Trial and to designate the resulting trial to be a Phase II Clinical Trial.

1.124 "*Phase II SCD Milestone Payment*" shall have the meaning set forth in Section 8.3(a).

1.125 "*Pivotal Clinical Trial*" means a human clinical trial of a Licensed Product which is intended to be a pivotal trial for obtaining Marketing Approval, or is according to 21 C.F.R. §312.21(c), as amended, or its equivalent, as appropriate, in foreign jurisdictions.

1.126 "*Pivotal Clinical Trial BT Milestone Payment*" shall have the meaning set forth in Section 8.3(a).

1.127 "*Pivotal Clinical Trial Milestone Payment*" means each of the Pivotal Clinical Trial BT Milestone Payment and the Pivotal Clinical Trial SCD Milestone Payment.

1.128 "*Pivotal Clinical Trial SCD Milestone Payment*" shall have the meaning set forth in Section 8.3(a).

1.129 "*Product-Specific IP***"** means, subject to Section 9.1(d), all Patent Rights Controlled by a Party or an Affiliate thereof as of the Execution Date or during the Term that contain only a claim or claims limited to (a) one or more Licensed Products or methods of manufacture or use thereof, (b) one or more Collaboration Compositions of Matter or methods of manufacture or use thereof, or (c) the subject matter in the foregoing clauses (a) and (b). For clarity, Patent Rights that contain one or more claims that cover (i) a product or service that is not a Licensed Product, (ii) a composition that is not a Collaboration Composition of Matter or (iii) the manufacture or use of any of the foregoing in (i) and (ii) will not be Product-Specific IP. Schedule 1.129 sets forth the Licensed Patents that are Product-Specific IP as of the Execution Date, and will be updated, through coordination of the Patent Affairs Representatives, on or prior to the Schedule Revision Date to include additional Licensed Patents filed between the Execution Date and the Schedule Revision Date that are Product-Specific IP as of the Effective Date, if any.

1.130 "*Program Data*" means all data generated by Sangamo or its Affiliates, Subcontractors or agents in the course of performance of their activities pursuant to the Research Programs or Section 2.12.

1.131 "*Receiving Party*" shall have the meaning set forth in Section 1.32.

1.132 "*Regulatory Filings*" means all INDs, Orphan Drug Designation applications and other regulatory filings related to the Research Programs, including the rights in such documents.

1.133 "*Research*" means, with respect to a Collaboration Composition of Matter or Licensed Product, any research on such Collaboration Composition of Matter or Licensed Product other than research that involves designing or changing the amino acid sequence of a DNA-Binding Molecule used in connection therewith, or designing or changing the nucleic acid sequence of a molecule or vector encoding any such DNA-Binding Molecule or any donor nucleic acid used in connection therewith.

1.134 "*Research and Development Plan*" means, with respect to each of the beta thalassemia Research Program (the "*BT Development Plan*") and the sickle cell disease Research Program (the "*SCD Development Plan*"), the description, timeline and budget covering the specific activities to be performed by Sangamo or, if applicable, by Biogen Idec under the applicable Research Program during the applicable Research Term.

1.135 "*Research Program*" means one of two (2) research collaborations between the Parties, under the direction and oversight of the JSC, to discover and optimize Collaboration Compositions of Matter, to conduct IND-enabling studies for Licensed Products and, in the case of beta thalassemia, to clinically develop (through Phase I Completion) a Licensed Product in accordance with the applicable Research and Development Plan. The two (2) Research Programs are the beta thalassemia Research Program (the "*BT Program*"), which is focused on Collaboration Compositions of Matter and Licensed Products for the treatment of beta thalassemia, and the sickle cell disease Research Program (the "*SCD Program*"), which is focused on Collaboration Compositions of Matter and Licensed Products for the treatment of sickle cell disease.

1.136 "*Research Terms*" means each of (a) with respect to the BT Program, the period of time beginning on the Effective Date and ending on the BT Step-In Date (such period, the "*BT Research Term*"), (b) with respect to the SCD Program, the period of time beginning on the effective date of the SCD Development Plan and ending on the SCD Step-In Date (such period, the "*SCD Research Term*").

1.137 "*Royalty Term*" means, with respect to a Licensed Product and country, the period commencing on the First Commercial Sale of such Licensed Product in such country and continuing until the longer of: (a) [***] years after such First Commercial Sale of such Licensed Product in such country; (b) the expiration of market or data exclusivity for such Licensed Product in such country granted by an applicable regulatory authority; and (c) the expiration of all Valid Claims in such country that cover the manufacture, use or sale of such Licensed Product or any Collaboration Composition of Matter that is incorporated or used in the manufacture or processing of such Licensed Product.

1.138 "*Safe Harbor Locus*" means the native human chromosomal locus of any of the following Genes: [***] or (d) any other human locus that Sangamo identifies as appropriate for Gene insertion and that is different from the native locus of any Gene Target.

1.139 "*Safety Terminated Product*" shall have the meaning set forth in Section 14.7.

1.140 "*Sangamo*" shall have the meaning set forth in the introduction to this Agreement.

1.141 "*Sangamo Indemnified Party*" shall have the meaning set forth in Section 11.2.

1.142 "*SCD Development Plan*" shall have the meaning set forth in Section 1.134.

1.143 "*SCD Program*" shall have the meaning set forth in Section 1.135.

1.144 "*SCD Research Term*" shall have the meaning set forth in Section 1.136.

1.145 "*SCD Step-In Date*" shall have the meaning set forth in Section 2.13(b).

1.146 "*Schedule Revision Date*" shall mean the earlier of (a) the third day following the HSR Clearance Date and (b) the day on or after the HSR Clearance Date on which Sangamo provides to Biogen Idec either (i) Sangamo's supplemental or additional schedules (if any) pursuant to the proviso in the first sentence of Section 7.2, the agreed-upon updated schedules of Core IP, Other IP and Product-Specific IP, if any, and a notice that no further supplemental, additional or updated schedules will be provided or (ii) instead of providing any such supplemental, additional or updated schedules, a notice that no further supplemental, additional or updated schedules will be provided.

1.147 "*SEC*" shall have the meaning set forth in Section 10.3.

1.148 "*Selected Core IP*" shall have the meaning set forth in Section 9.2(b)(i)(A).

1.149 "*Specifically Bind*" means, with respect to a nucleic acid-binding protein, that such nucleic acid-binding protein preferentially binds a Gene Target or Safe Harbor Locus without known off-locus binding that is preclinically or clinically significant, as reasonably determined by Sangamo in the course of performing work pursuant to a Research and Development Plan or pursuant to Section 2.12 and which determination shall be reported to the JSC, based upon data that is shared with the JSC.

1.150 "*Subcontractor*" shall have the meaning set forth in Section 2.5(a).

1.151 *"Sublicensee*" means an Affiliate or Third Party to whom Biogen Idec (or a Sublicensee or Affiliate) has granted a right to make, use, develop, sell, offer for sale or import a Licensed Product or make a Collaboration Composition of Matter; provided that Sublicensees shall not include Third Party distributors who have rights to develop, manufacture or commercialize Licensed Products in a particular country that are of no greater scope than is customarily granted by Biogen Idec or its Affiliates to pharmaceutical distributors in such country.

1.152 "*Sued Party*" shall have the meaning set forth in Section 9.7.

1.153 "*TALE Protein*" or "*TALE DNA-binding protein*" means a polypeptide comprising one or more TALE repeat domains or units. The repeat domains are involved in the specificity of the TALE for its cognate target DNA sequence. A single "repeat unit" (also known as a "repeat") is typically about 33-35 amino acids in length and exhibits at least some sequence homology with other TALE repeat sequences within a naturally occurring TALE protein. Non-limiting examples of a TALE Protein can be found in [***] as well as references cited in Schedule 1.26. "*TALE Protein*" and "*TALE DNA-binding Protein*" shall have the same meaning unless otherwise specified.

1.154 "*Target ROFN Exercise Notice*" shall have the meaning set forth in Section 6.3(f)(ii).

1.155 "*Target ROFN Exercise Period*" shall have the meaning set forth in Section 6.3(f)(ii).

1.156 "*Target ROFN Notice*" shall have the meaning set forth in Section 6.3(f)(ii).

1.157 "*Target ROFN Term*" shall mean the period beginning on the[***] anniversary of the Effective Date, provided that the Agreement is not terminated prior to such anniversary pursuant to Section 14.5, 14.6 or 14.7 or pursuant to Section 14.4 for Biogen Idec's material breach, and ending on the last day of the Term; provided that if Biogen Idec terminates this Agreement pursuant to Section 14.4 prior to the [***] anniversary of the Effective Date, the Target ROFN Term shall mean the period beginning on the effective date of any such termination and ending [***] thereafter.

1.158 "*Term*" shall have the meaning provided in Section 14.1.

1.159 "*Terminated Product*" shall have the meaning set forth in Section 14.8(a)(iv).

1.160 "*Territory*" means the entire world.

1.161 "*Third Party*" means any person or entity other than Sangamo, Biogen Idec and their respective Affiliates.

1.162 "*Third Party Core IP*" means, subject to Section 9.1(d), Patent Rights controlled by a Third Party that claim or cover, and Know-How controlled by a Third Party that relates to, one or more of the following:

(a) a method for (i) [***] (ii) [***] or changing [***] (iii) making or [***] (iv) [***], making or using [***]

(b) a method for using zinc finger technology to: (i) perform methods [***] (ii) perform methods of [***]

(c) [***] any of the following or a portion thereof: (i) [***](ii) a library of [***] resulting from any of the methods [***]

1.163 "*Third Party Infringer*" shall have the meaning set forth in Section 9.3(b)(i).

1.164 "*Third Party IP Rights*" shall have the meaning set forth in Section 9.4(a).

1.165 "*Third Party Licenses*" means the Existing Third Party Licenses and any Third Party agreement that is deemed to be a Third Party License pursuant to Section 9.4(e).

1.166 "*Third Party Other IP*" means, subject to Section 9.1(d), Patent Rights controlled by a Third Party that claim or cover, and Know-How controlled by a Third Party that relates to, one or more of the following:

(a) a method of isolating, manipulating, propagating, maintaining, banking or storing [***]

(b) a method of formulating or administering a [***]

(c) a method of modifying a [***]

(d) a method of formulating, administering or using a [***]

(e) [***] a method described in any clause of this Section 1.166, or

(f) [***]

1.167 "*Third Party Product-Specific IP*" means, subject to Section 9.1(d), Patent Rights controlled by a Third Party that contain only a claim or claims limited to, and Know-How controlled by a Third Party that relates solely to (a) one or more Licensed Products or methods of manufacture or use thereof, (b) one or more Collaboration Compositions of Matter or methods of manufacture or use thereof, or (c) the subject matter in the foregoing clauses (a) and (b). For clarity, Patent Rights that contain one or more claims that cover, and Know-How that is related to (i) a product or service that is not a Licensed Product, (ii) a composition that is not a Collaboration Composition of Matter or (iii) the manufacture or use of any of the foregoing in (i) and (ii) will not be Third Party Product-Specific IP.

1.168 "*Trigger 1*" shall have the meaning set forth in Section 1.16.

1.169 "*Trigger 2*" shall have the meaning set forth in Section 1.16.

1.170 "*Trigger 3*" shall have the meaning set forth in Section 1.16.

1.171 "*Type A Gene Target*" shall have the meaning set forth in Section 1.60.

1.172 "*Type B Gene Target*" shall have the meaning set forth in Section 1.60.

1.173 "*Type C Gene Target*" shall have the meaning set forth in Section 1.60.

1.174 "*U.S. GAAP*" shall have the meaning set forth in Section 1.109.

1.175 "*U.S. PTO*" means the United States Patent and Trademark Office.

1.176 "*Utah Agreement*" means that certain License Agreement between Sangamo and the University of Utah Research Foundation, dated September 8, 2004, as amended.

1.177 "*Valid Claim*" means (a) a claim of an issued and unexpired (i) Licensed Patent owned by Sangamo (excluding Patent Rights acquired during the Term from a Third Party or in connection with the acquisition during the Term of a Third Party) or included in the Existing Third Party Licenses or (ii) Joint Patent, in each case that has not been revoked or held unenforceable, unpatentable or invalid by a decision of a court or other governmental agency of competent jurisdiction that is not appealable or has not been appealed within the time allowed for appeal, and that has not been abandoned, disclaimed, denied or admitted to be invalid or unenforceable through reissue, re-examination or disclaimer or otherwise, or (b) a claim of a patent application included in a (i) Licensed Patent owned by Sangamo (excluding Patent Rights acquired during the Term from a Third Party or in connection with the acquisition during the Term of a Third Party) or included in the Existing Third Party Licenses or (ii) Joint Patent, in each case that has been pending less than five (5) years from the earliest date on which such patent application claims priority and which claim was filed and is being prosecuted in good faith and has not been cancelled, withdrawn or abandoned or finally rejected by an administrative agency action from which no appeal can be taken.

1.178 "*ZFN*" as used in Schedule 1.26, means a zinc finger nuclease, *i.e.*, a Zinc Finger Protein Operably Linked to a Functional Domain that is a nuclease.

1.179 "*Zinc Finger Protein*" means a protein that binds DNA in a sequence-specific manner through one or more zinc fingers, which are regions of amino acid sequence within the binding domain whose structure is stabilized through coordination with a zinc ion. The term "zinc finger DNA binding protein" is often abbreviated as Zinc Finger Protein or ZFP. Non-limiting examples of a Zinc Finger Protein can be found in [***] as well as references cited in Schedule 1.26.

2 RESEARCH PROGRAMS

2.1 Overview. The Parties will use Commercially Reasonable Efforts to conduct [***] Research Programs to discover and develop Collaboration Compositions of Matter and Licensed Products, the BT Program and the SCD Program. Each Research Program will be conducted during the corresponding Research Term. Under the BT Program, Sangamo will discover and optimize Collaboration Compositions of Matter intended for the treatment of beta thalassemia, will conduct IND-enabling studies of a Licensed Product intended for the treatment of beta thalassemia, and will, except as otherwise set forth in this Agreement, conduct the First in Human Trial of such Licensed Product under an IND filed by Sangamo. Following the earlier of Phase I Completion and Biogen Idec's assumption of activities under the BT Development Plan pursuant to Section 2.13(a), Sangamo will assign and transfer such IND and any Orphan Drug Designation application to Biogen Idec, who will thereafter be solely responsible for all clinical development, regulatory matters and commercialization of Licensed Products arising from the BT Program. Under the SCD Program, Sangamo will discover and optimize Collaboration Compositions of Matter intended for the treatment of sickle cell disease, will, together with Biogen Idec as described in the SCD Development Plan, conduct IND-enabling studies of a Licensed Product intended for the treatment of sickle cell disease, and if selected by the JSC to

perform such tasks, will prepare and file an IND for such Licensed Product. If Sangamo files such IND, it will subsequently assign and transfer such IND and any Orphan Drug Designation applications to Biogen Idec, who will thereafter be solely responsible for all clinical development, regulatory matters and commercialization of Licensed Products arising from the SCD Program.

2.2 Research and Development Plans.

(a) Generally. Each Research and Development Plan will define events leading to and including submission of an IND for a Licensed Product intended for the treatment of beta thalassemia or sickle cell disease, as applicable, and, in the case of the BT Program, for the conduct of the First in Human Trial of such Licensed Product and will include: (i) a description of the process for identifying and the criteria for selecting Collaboration Compositions of Matter, (ii) a description of the Licensed Product to be developed under such Research and Development Plan, (iii) a description of the specific activities during such period to be performed by Sangamo and, subject to Section 2.4, by Biogen Idec, including the IND-enabling studies necessary to prepare an IND and the First in Human Trial (for the BT Development Plan), (iv) an annual budget and (v) a plan for technology transfer from Sangamo to Biogen Idec with respect to the Licensed Product for which the IND is filed. The JSC will review and prepare updates to each Research and Development Plan on an annual basis, by August 15 for the following calendar year, and will approve such plans no later than October 15 of the calendar year in which such plans are prepared. The budget in each Research and Development Plan shall be annually updated and approved in accordance with Section 2.7(d). Each Research and Development Plan shall be consistent with the terms of this Agreement and shall be appended to and form a part of this Agreement. In the event of an inconsistency between a Research and Development Plan and this Agreement, the terms of this Agreement will prevail. For the avoidance of doubt, in no event shall the SCD Development Plan extend beyond the filing of the IND for the applicable Licensed Product nor shall the BT Development Plan extend beyond Phase I Completion or cover any activities or decisions prior to Phase I Completion other than those in connection with Phase I Completion, except pursuant to Section 2.11 or 2.12.

(b) Initial Research and Development Plans. The initial BT Development Plan is attached hereto as Exhibit A. Within [***] after the Effective Date, the JSC will begin preparing the SCD Development Plan, which the JSC will complete and submit to the Parties for approval in sufficient time for the Parties to commence conducting the SCD Program no later than [***] after the Effective Date. Upon written approval by each Party, the SCD Development Plan will be in effect; provided that if the Parties do not agree on an initial SCD Development Plan within [***] after the Effective Date, then the disputed matters will be submitted to the Chief Executive Officer of each Party (or his/her nominee) for good faith discussions, and if such individuals are not able to resolve the matter within [***] of such submission, then notwithstanding the foregoing, Biogen Idec shall approve a SCD Development Plan within [***] thereafter and, unless the Parties agree otherwise, the Parties shall use Commercially Reasonable Efforts to begin working on such SCD Development Plan no later than [***] after the Effective Date.

(c) Project Managers and Working Teams. Each Research and Development Plan shall identify a Sangamo project leader, reasonably acceptable to Biogen Idec, which project leader shall devote no less than [***] of his/her time to carrying out such Research and Development Plan during the active conduct of such Research and Development Plan. In addition, the Parties will form a working team for each Research and Development Plan comprising at least the project leader for the Research and Development Plan (who will be a Sangamo employee) and one or more representative(s) from each of Biogen Idec and Sangamo, which team will stay in active communication about activities taking place and information arising under the respective Research and Development Plan. This team shall be subordinate to the JSC and shall confer regularly, and at such specific times as the JSC shall reasonably request, to ensure close cooperation and exchange of information between the Parties as Sangamo fulfills its responsibilities under the applicable Research Program.

2.3 Sangamo Responsibilities. During each Research Term and subject to the oversight of the JSC, Sangamo shall be solely responsible for carrying out the tasks allocated to Sangamo in the applicable Research and Development Plan. Subject to Section 2.7, Sangamo shall use Commercially Reasonable Efforts in the performance of its obligations under each Research Program and corresponding Research and Development Plan during the Research Term for such Research Program. Sangamo shall not be responsible for any delay or failure to conduct any activity under a Research and Development Plan to the extent resulting from Biogen Idec's failure to timely or properly conduct any activities allocated to Biogen Idec under such Research and Development Plan. Following expiration of the Research Term for a Research Program, Sangamo shall have no further obligations to conduct activities under the Research and Development Plan for such Research Program, unless such Research Term is re-established in accordance with Section 2.10(b).

2.4 Biogen Idec Responsibilities. During each Research Term, Biogen Idec shall be solely responsible for the costs set forth in the budget for the applicable Research Program to the extent set forth in this Agreement. In addition, Biogen Idec shall conduct activities allocated to it under a Research and Development Plan. Activities under the BT Development Plan shall only be allocated to Biogen Idec (i) at Biogen Idec's election if [***] (ii) if the Parties otherwise agree in writing to [***]. Activities under the SCD Development Plan shall be allocated to Biogen Idec at Biogen Idec's sole discretion. Notwithstanding the foregoing, Biogen Idec shall not have the right to design or optimize any [***] under a Research and Development Plan. Biogen Idec shall use Commercially Reasonable Efforts in the performance of its obligations, if any, under each such Research Program and corresponding Research and Development Plan during the Research Term for such Research Program; provided that Biogen Idec shall not be responsible for any delay or failure to conduct any activity under a Research and Development Plan to the extent resulting from Sangamo's failure to timely or properly conduct any activities allocated to Sangamo under such Research and Development Plan. To the extent Sangamo engages any Subcontractor, Sangamo shall use reasonable efforts to allow Biogen Idec to participate in any substantive interactions that Sangamo has with such Subcontractor.

2.5 Conduct.

(a) In performing its activities under the Research and Development Plans and this Agreement, each Party shall, and shall require its Affiliates and any consultant, subcontractor, or other vendor conducting its obligations under a Research and Development Plan (each, a "*Subcontractor*") to, comply with all applicable laws, regulations and guidelines concerning such manufacturing and development activities, including where appropriate in accordance with cGMP, GCP and GLP (or similar standards) for the performance of laboratory activities as are required by applicable law.

(b) All IND submissions and Orphan Drug Designation applications by Sangamo for Licensed Products shall be subject to the oversight and approval of the JSC, and Sangamo shall not file any such IND submission package or Orphan Drug Designation application for a Licensed Product with a regulatory authority prior to receiving the JSC's approval. Where Sangamo is the Party filing an IND hereunder, Sangamo shall provide Biogen Idec with a draft of each proposed regulatory submission for a Licensed Product (including IND submission packages, Orphan Drug Designation applications and any supporting materials) sufficiently in advance [***], where possible) of providing such submission to a regulatory authority to enable Biogen Idec ample and reasonable time to have a meaningful opportunity to provide input on the content of such submission. Sangamo shall consider in good faith any reasonable suggestions or comments timely received from Biogen Idec with respect to such regulatory submissions. Promptly following any such submission, Sangamo shall provide to Biogen Idec final copies of all study reports and substantive written correspondence to any regulatory authority involving any such IND submission or Orphan Drug Designation application for a Licensed Product. Sangamo shall notify and provide copies to Biogen Idec of all substantive written correspondence and communications from any regulatory authority involving a regulatory submission for a Licensed Product promptly following receipt; provided that if any such correspondence and communications are critical for patient safety, Sangamo shall provide such correspondence and communications to Biogen Idec within [***] of receipt. Where Sangamo is the Party filing an IND hereunder, to the extent permitted by applicable laws and regulations, Sangamo shall permit at least two (2) Biogen Idec representatives to attend in an observatory capacity all meetings with regulatory authorities to the extent related to a Licensed Product, including all in-person meetings, telephone conferences and pre-IND meetings. Sangamo shall provide to Biogen Idec a copy of minutes from each such meeting with a regulatory authority. Prior to any such scheduled meeting with a regulatory authority, to the extent practical without causing any delay in the timeline set forth in the applicable Research and Development Plan, the Parties will discuss and mutually agree upon the timing and objectives for such meeting and Sangamo will provide to Biogen Idec an opportunity to discuss the strategy for such meeting with Sangamo. In addition, Sangamo shall invite Biogen Idec to attend all pre-meeting rehearsals for scheduled meetings with a regulatory authority that occur after the applicable briefing document is submitted.

(c) Sangamo shall initially be the owner of any IND filed pursuant to the BT Program for a Licensed Product. The JSC will decide which Party shall initially be the owner of any IND filed pursuant to the SCD Program for a Licensed Product. Within [***] following the earlier of Phase I Completion or Biogen Idec's assumption of activities under the BT Development Plan pursuant to Section 2.13(a), Sangamo shall transfer to Biogen Idec all such Regulatory Filings and Program Data related to the BT Program generated prior to such transfer, and assign all Regulatory Filings, including ownership rights as provided in Section 4.1(c). If Sangamo files the IND for a Licensed Product from the SCD Program, promptly after the thirtieth (30^{th}) day following the filing of such IND (or the day of release of any clinical hold placed on such IND during the thirty (30)-day period after filing), Sangamo shall transfer to Biogen Idec all Regulatory Filings and Program Data related to the SCD Program generated prior to such transfer, and assign all such Regulatory Filings, including ownership rights as provided in Section 4.1(c).

(d) To facilitate the conduct of each Research Program or perform activities that are otherwise permitted by the license grant in Section 6.1, either Party may provide to the other Party certain biological materials (including [***]) or chemical compounds Controlled by and in the possession of the supplying Party for use by the other Party (such materials or compounds and any progeny and derivatives thereof, collectively, "*Materials*"). All such Materials shall remain the sole property of the supplying Party, shall be used only in the fulfillment of obligations or exercise of rights under this Agreement and solely under the control of the receiving Party, shall not be used or delivered by the receiving Party to or for the benefit of any Third Party other than a permitted Subcontractor without the prior written consent of the supplying Party, and shall not be used in research or testing involving human subjects, unless expressly agreed. The Materials supplied under this Section 2.5(d) are supplied "as is" and must be used with prudence and appropriate caution in any experimental work, since not all of their characteristics may be known.

(e) Each Research Program may be terminated only by written agreement of the Parties; provided that either Party may terminate a Research Program if such Party reasonably determines in good faith that the medical risk/benefit of the Licensed Product(s) associated with such Research Program is so unfavorable that it would be incompatible with the welfare of patients to continue developing such Licensed Product(s); provided further that prior to exercising such termination right, the Party considering such termination shall notify the other Party, after which the Parties shall discuss in detail the reasons for such proposed termination, which discussions may include, if requested by the other Party, discussions between appropriate executives of each Party. If following completion of such discussions, such Party still desires to terminate such Research Program on account of such medical risk/benefit, it shall notify the other Party in writing, and the Parties shall determine in good faith an appropriate wind-down of such Research Program.

2.6 Subcontractors. Each Party may engage Subcontractors to perform any work under the Research Programs; provided that all such Sangamo engagements and any contracts related to such engagements shall be subject to the prior written approval of Biogen Idec, such approval not to be unreasonably withheld; further provided that in the event Sangamo elects to engage a Subcontractor to provide any non-clinical activity that Biogen Idec possesses the internal capabilities to perform, Sangamo shall notify Biogen Idec and Biogen Idec shall determine whether Biogen Idec, at its expense, will provide such non-clinical activity to Sangamo in accordance with the applicable timeline, subject to Section 2.4. Each contract between a Party and a Subcontractor shall be consistent with the provisions of this Agreement and shall include provisions, including intellectual property provisions, adequate for the other Party to enjoy the licenses granted hereunder as though such Party had performed the contracted work. Each Party shall be responsible for the management of its Subcontractors. The engagement of any Subcontractor in compliance with this Section 2.6 shall not relieve the applicable Party of its obligations under this Agreement or any applicable Research and Development Plan. Notwithstanding Biogen Idec's reimbursement obligations pursuant to Section 2.7, each Party shall be solely responsible for any taxes, including income, withholding, payroll, VAT, sales tax or the like, that arise from the use of a Subcontractor.

2.7 Funding of the Research Programs.

(a) Budgeted costs. Biogen Idec in its [***] the initial budget for the SCD Development Plan (which shall include a binding portion of no more than [***]) and any amendments, modifications or updates to the budgets for the BT Development Plan and the SCD Development Plan; provided that Biogen Idec shall provide such proposed initial budget and each proposed amendment, modification and update to a budget to Sangamo before approval thereof. If within fifteen (15) days after receipt of any such proposed initial budget or budget amendment, modification or update from Biogen Idec, Sangamo notifies Biogen Idec that such proposed initial budget or budget amendment, modification or update is insufficient to support the number of FTEs required to perform the activities in the corresponding Research and Development Plan, or if within thirty (30) days after receipt of any such proposed amendment, modification or update to the budget for the BT Development Plan from Biogen Idec, Sangamo notifies Biogen Idec that such proposed budget amendment, modification or update does not sufficiently fund any external costs under the BT Development Plan, then Biogen Idec shall do any one of the following: [***]

(i) *BT Development Plan Costs*. The initial budget for the BT Development Plan, which budget commences no earlier than [***], is included in the initial BT Development Plan attached hereto as Exhibit A. Biogen Idec shall [***] costs (up to the [***]) and [***] by Sangamo and its Affiliates in the conduct of the BT Development Plan (to the extent [***] by any Third Party), in accordance with the budget set forth in the BT Development Plan. For the avoidance of doubt, [***] Biogen Idec with [***] by Sangamo and shall exclude [***] by Sangamo.

(ii) *SCD Development Plan Costs*. Biogen Idec shall [***] costs (up to the [***]) and [***] by Sangamo and its Affiliates in the conduct of the SCD Development Plan (to the extent [***] by any Third Party), in accordance with the budget set forth in the SCD Development Plan; provided that if such [***], Biogen Idec shall [***] costs. For the avoidance of doubt, [***] Biogen Idec with [***] by Sangamo and shall [***] by Sangamo.

(b) Budget changes.

(i) If Sangamo reasonably anticipates that (A) the [***] costs of conducting, or having a Subcontractor conduct, any activity set forth in the BT Development Plan, or (B) the number of Sangamo [***] conducting any activity under a Research and Development Plan [***] the budgeted amount therefor, or if such amounts [***] the budgeted amount therefor, Sangamo shall notify Biogen Idec through the JSC and request a change to the budget. Biogen Idec shall in good faith consider all such reasonable requests by Sangamo to change a budget for a Research and Development Plan within [***] days of Sangamo's request. If Biogen Idec does not approve any such request, then Sangamo shall [***] for (x) the [***] costs to conduct such activity [***] and (y) the [***] costs under the BT Development Plan to conduct such activity [***] therefor.

(ii) If the JSC amends a Research and Development Plan to include additional activities or change the scope of any existing activities, then subject to Section 2.7(a), (x) Biogen Idec shall amend the corresponding budget accordingly (following the procedure under Section 2.7(a)) and (y) Sangamo shall use Commercially Reasonable Efforts to conduct any such additional or revised activities that are assigned to Sangamo in the amended Research and Development Plan.

(iii) If either Party reasonably determines that an activity conducted under a Research and Development Plan should be repeated for a reason other than for a Party's or its Affiliate's, Subcontractor's or agent's negligence, or that in light of new developments, additional activities should be added to a Research and Development Plan or activities included in the Research and Development Plan should be modified, such Party shall notify the JSC. If the JSC agrees that either Party should repeat such activity or conduct additional or modified activities, the JSC shall amend such Research and Development Plan. Subject to Section 2.7(a), (x) Biogen Idec shall amend the corresponding budget accordingly (following the procedure under Section 2.7(a)) and (y) Sangamo shall use Commercially Reasonable Efforts to repeat or conduct any such additional or modified activity, or any activity that is dependent upon the completion of such repeated, additional or modified activity that is assigned to Sangamo in the amended Research and Development Plan. For the avoidance of doubt, if any activity under a Research and Development Plan needs to be repeated as a result of the negligence of a Party, its Subcontractors or agents, then such Party shall repeat such activity at its own expense.

(c) FTE Rate. The budget set forth in each Research and Development Plan shall include FTE costs at a rate of [***] per year per [***] for the first [***] of this Agreement. Beginning at [***] of the Term, the FTE rate [***] by the [***]. For the avoidance of doubt, such FTE Rate includes [***].

(d) Annual budgets. No later than August 15 of each calendar year during any Research Term (except for the last calendar year during a Research Term), the JSC will prepare a budget for the applicable Research Program under which activities are anticipated to be conducted in the following calendar year and submit such budget to Biogen Idec for approval no later than October 15 of the calendar year in which such budget is prepared. The binding portion of each budget for the SCD Development Plan shall cover no more than [***].

(e) Certain Equipment and Supplies. During the Term, Biogen Idec will purchase any equipment and supplies that cost [***] or more and that are separately itemized external expenses in the budget for the SCD Program or the BT Program, as applicable. Biogen Idec will have such equipment and supplies delivered to Sangamo, and Sangamo will use such equipment and supplies during the Term solely to perform the obligations assigned to Sangamo

under the applicable Research and Development Plan. Biogen Idec will retain all right and title to all such equipment and supplies. Sangamo will affix a marking to each such piece of equipment and the supplies clearly identifying such equipment and supplies as the property of Biogen Idec. Sangamo will, at Biogen Idec's sole expense, return all such equipment and any unused supplies to Biogen Idec at a facility designated by Biogen Idec (with any risk of loss of such equipment and supplies being borne by Sangamo until received by Biogen Idec at such facility) within thirty (30) days of such a request and in no event later than thirty (30) days following the end of the Research Term for the SCD Program or BT Program, as applicable. Prior to the return of such equipment to Biogen Idec, Sangamo will maintain the equipment in good working order and operating condition, reasonable wear and tear excepted, in accordance with the manufacturer's instructions, and shall have and maintain such types and amounts of insurance with respect to such equipment as is normal and customary in the industry for similar types of equipment. Sangamo will be responsible for any damage (other than normal wear and tear resulting from proper use thereof alone excepted) or destruction of such equipment and will promptly replace any such damaged or destroyed equipment.

2.8 Records.

(a) Research Records. Each Party shall maintain, consistent with its then-current internal policies and practices, and cause its employees and Subcontractors to maintain, records and laboratory notebooks in sufficient detail and in a good scientific manner appropriate for (i) inclusion in filings with regulatory authorities, and (ii) obtaining and maintaining intellectual property rights and protections, including Patent Rights. Such records and laboratory notebooks shall be complete and accurate in all material respects and shall fully and properly reflect all work done, data and developments made, and results achieved. During each Research Term, each Party shall periodically, but not less than quarterly, allow the other Party to inspect and, to the extent necessary or useful for such regulatory or intellectual property protection purposes, copy such records.

(b) JSC Reports. Each Party shall keep the JSC informed of the progress of its activities under each Research and Development Plan, including delivering quarterly written updates of its progress under each Research and Development Plan to the JSC at least one (1) week in advance of each JSC meeting.

(c) Expense Records. Sangamo shall maintain complete and accurate books, records and accounts used for the determination of FTEs (including FTE utilization) and external expenses incurred in connection with the performance of its obligations under each Research Program, in sufficient detail to confirm the accuracy of any payments required under this Agreement, which books, records and accounts will be retained by Sangamo for three (3) years after creation of the individual records, or longer as is required by applicable law. Such books, records and accounts shall be kept in accordance with U.S. GAAP and Sangamo's then-current accounting procedures. For the avoidance of doubt, if Sangamo's then-current accounting procedures are not U.S. GAAP compliant, then Sangamo shall alter its accounting procedures such that they are U.S. GAAP compliant.

2.9 Biogen Idec Audit Rights.

(a) Upon [***] advance written notice by Biogen Idec and not more than [***] in each calendar year (except for cause), Sangamo and its Affiliates shall permit an independent certified public accounting firm of internationally recognized standing, selected by Biogen Idec and reasonably acceptable to Sangamo, to have access during normal business hours to such of the records of Sangamo and its respective Affiliates as may be reasonably necessary to verify the accuracy of the invoices provided by Sangamo to Biogen Idec pursuant to Section 8.2(a) for any year ending not more than thirty-six (36) months prior to the date of such request. No year may be audited more than once, except for cause. The accounting firm will enter a confidentiality agreement reasonably acceptable to Sangamo governing the use and disclosure of Sangamo's information disclosed to such firm, and such firm shall disclose to Biogen Idec only whether the invoices are correct or not and the specific details concerning any discrepancies, which information shall be Confidential Information of Sangamo.

(b) Unless disputed by Biogen Idec or Sangamo in good faith, if such accounting firm concludes that the amounts paid during the audited period were more or less than the amounts actually due to Sangamo, Biogen Idec shall pay any additional amounts due, and Sangamo will refund any amounts overpaid, in each case plus interest as set forth in Section 8.11, within forty-five (45) days after the date the written report of the accounting firm so concluding is delivered to Sangamo and Biogen Idec. The written report will be binding on the Parties absent clear error. The fees charged by such accounting firm shall be paid by [***]; provided, that if the audit discloses that the amounts payable by [***] for such period have been overpaid by more than [***], then [***] shall pay the reasonable fees and expenses charged by such accounting firm. Biogen Idec shall treat all financial information disclosed by its accounting firm pursuant to this Section 2.9 as Confidential Information of Sangamo for purposes of Article 10 of this Agreement, and shall cause its accounting firm to do the same.

(c) In the event of a good faith dispute by Biogen Idec or Sangamo regarding the result of an audit made pursuant to this Section 2.9, the Parties shall agree in good faith on an alternative independent certified public accounting firm of internationally recognized standing to perform a second audit. If such audit is requested by Biogen Idec because Biogen Idec was found by the initial audit to have underpaid and the second audit confirms that Biogen Idec underpaid, then Biogen Idec shall bear all costs associated with the second audit. If such audit is requested by Sangamo because Biogen Idec was found by the initial audit to have overpaid and the second audit confirms that Biogen Idec overpaid, then Sangamo shall bear all costs associated with the second audit. Notwithstanding the above, in the event that the second audit confirms the findings of the first audit, the requesting Party shall pay. No over or under payment indicated by the initial audit shall be payable in the event of a dispute until the second audit is complete and such second audit shall be binding on the Parties, with any under or over payment determined thereby, plus interest as set forth in Section 8.11, being payable within forty-five (45) days after the date the written report of the accounting firm so concluding is delivered to Sangamo and Biogen Idec.

2.10 Research Terms.

(a) Extension of a Research Term. The Parties may extend either Research Term upon written agreement, including to conduct activities described under Sections 2.11 and 2.12.

(b) Re-establishment of the Research Term. At any time during the Term following expiration of the applicable Research Term, if the Parties agree to conduct any activities under Section 2.11 or 2.12 for a Research Program, then in connection with preparing an amended Research and Development Plan for such activities, the Parties shall re-establish the applicable Research Term and specify the length of such re-established Research Term in the amended Research and Development Plan.

2.11 Additional Target. At any time during the Term, whether during the applicable Research Term or thereafter, if Sangamo identifies a Gene whose modification Sangamo reasonably believes to be useful for the treatment or prevention of sickle cell disease or beta thalassemia, Sangamo shall promptly notify Biogen Idec of such Gene. At any time during the Term, Biogen Idec may notify Sangamo and request that Sangamo conduct activities under a Research and Development Plan with respect to (a) any Gene identified by Sangamo in the preceding sentence or (b) any other Gene that Biogen Idec identifies whose modification Biogen Idec reasonably believes to be useful for the treatment or prevention of sickle cell disease or beta thalassemia. Such notice shall provide all relevant information available to Biogen Idec with respect to the applicable Gene. Within [***] days after Sangamo's receipt of such notice and information, Sangamo shall notify Biogen Idec whether it agrees to conduct activities with respect to such Gene under the applicable Research and Development Plan. If Sangamo agrees, (i) the Parties shall prepare or amend the applicable Research and Development Plan (including budget) to include activities with respect to such Gene, which Research and Development Plan will be subject to the terms of this Article 2, (ii) Biogen Idec shall pay Sangamo a [***] target acceptance fee of [***] within [***] days after the Parties' written agreement to such new or amended Research and Development Plan including activities with respect to such Gene and (c) upon receipt of such fee, such Gene will be deemed a Gene Target subject to the terms of this Agreement. For the avoidance of doubt, if the Parties fail to agree on a new or amended Research and Development Plan including activities with respect to such Gene, then [***].

2.12 Further Development of Collaboration Compositions of Matter. If, after Sangamo's completion of activities under a Research and Development Plan, Biogen Idec desires to change the DNA-Binding Molecule used in or with respect to a Licensed Product or to develop a Licensed Product that contains, uses or is made through the use of, a Collaboration Composition of Matter that is different from those Collaboration Compositions of Matter used in or with respect to any Licensed Product for which an IND was filed pursuant to a Research Program, Biogen Idec shall notify Sangamo in writing, identifying the proposed change or development and reasons for requesting such proposed change or development; provided that any such change shall not result in a Zinc Finger Protein, TALE Protein or component of a CRISPR/Cas system that (a) [***], which Zinc Finger Protein, TALE Protein or component of a CRISPR/Cas system is identical in amino acid sequence to a Zinc Finger Protein, TALE Protein or component of a CRISPR/Cas system to which Sangamo or its Affiliate has granted exclusive rights to a Third Party or (b) does not qualify as a Collaboration Composition of Matter. The Parties shall promptly meet to discuss in good faith the proposed activities and prepare or amend the applicable Research and Development Plan (including budget), which Research and Development Plan will be subject to the terms of this Article 2; provided that if the Parties do not agree on such amended or new Research and Development Plan within [***] after the date on which Biogen Idec notifies Sangamo requesting a proposed change or development, then Biogen Idec shall have the sole authority to approve a Research and Development Plan that it is consistent with this Section 2.12.

2.13 Biogen Idec Step-In Rights.

(a) BT Program. If the BT Trigger Date is Trigger 1 or Trigger 3, then at any time on or after such date, Biogen Idec shall have the right, but not the obligation, to take over all of Sangamo's unfinished activities, if any, under the BT Development Plan upon five (5) days notice to Sangamo. Subject to Section 2.13(c), the "*BT Step-In Date*" shall mean the date on which Biogen Idec begins exercising such right to take over all of Sangamo's activities under the BT Development Plan. If the BT Trigger Date is Trigger 2, then Biogen Idec shall begin taking over all of Sangamo's unfinished activities, if any, under the BT Development Plan on the date of Phase I Completion and will have the right, but not the obligation, to take over such activities on [***], if such date is earlier than Phase I Completion, and the "*BT Step-In Date*" shall be such date. Notwithstanding the foregoing, if the BT Trigger Date is Trigger 2, then Biogen Idec shall have the right, but not the obligation, commencing on Trigger 2 to make all decisions with respect to the BT Program, including whether to expand the First in Human Trial and which Party would conduct any such expanded study; provided that Sangamo shall have no obligation to conduct any such expanded study unless Biogen Idec approves a budget for such expansion pursuant to Section 2.7(a) and the Parties extend the Research Term accordingly.

(b) SCD Program. If the JSC decides that Sangamo will be the Party responsible for filing the IND for a Licensed Product intended to treat sickle cell disease and such IND is not filed by the [***] anniversary of the date when the final IND-enabling toxicology report for the SCD Program becomes available, then at any time on or after such [***] anniversary, Biogen Idec shall have the right, but not the obligation, to take over all of Sangamo's unfinished activities, if any, under the SCD Development Plan upon five (5) days notice to Sangamo. Subject to Section 2.13(c), the "*SCD Step-In Date*" shall mean the date on which Biogen Idec begins exercising such right to take over all of Sangamo's activities under the SCD Development Plan following such five (5)-day notice period; provided that if the IND for a Licensed Product intended to treat sickle cell disease was filed by Sangamo prior to the [***] anniversary of the date set forth in the initial SCD Development Plan as the anticipated date for filing such IND, then Biogen Idec shall take over all of Sangamo's unfinished activities, if any, under the SCD Development Plan beginning on the [***] following the filing of such IND (or the day of release of any clinical hold placed on such IND during the [***] period after filing), and the "*SCD Step-In Date*" shall be such date. If the JSC decides that Biogen Idec will be the Party responsible for filing the IND for a Licensed Product intended to treat sickle cell disease, then Biogen Idec shall take over all of Sangamo's unfinished activities, if any, under the SCD Development Plan beginning on the date such IND was filed by Biogen Idec and the "*SCD Step-In Date*" shall be such date.

(c) Change of Control. Notwithstanding anything in this Agreement to the contrary, in the event of a Change of Control of Sangamo or an acquisition which results in a Competing Business Combination under Section 6.3(d), if Biogen Idec had not previously exercised its step-in rights under Section 2.13(a) and Section 2.13(b), then the BT Step-In Date and SCD Step-In Date, as applicable, shall, at Biogen Idec's election to take over all of

Sangamo's unfinished activities, if any, under the BT Development Plan or SCD Development Plan, as applicable, which election may be made at any time [***] after the date of such Change of Control or the closing date of such acquisition, as applicable, be the date of such election.

(d) Technology Transfer. Upon the occurrence of the BT Step-In Date or SCD Step-In Date, as applicable, if not effected before such time, Sangamo shall promptly undertake the technology transfer activities set forth in Sections 4.1(b) and 4.1(c).

3 JOINT STEERING COMMITTEE.

3.1 Composition.

(a) Formation and Chairman. The JSC shall be formed as soon as practicable, but no later than thirty (30) days following the Effective Date. Subject to Section 3.1(b), the JSC shall be comprised of an equal number of representatives from each Party. If mutually agreed by all JSC members on a case-by-case basis, the JSC may invite other non-members to participate in the discussions and meetings of the JSC, provided that such participants shall have no voting authority at the JSC. Each Party shall notify the other Party in writing of its initial representatives to the JSC, and may substitute one or more representatives from time-to-time upon written notice to the other Party. A designated representative of Biogen Idec will be the chairman of the JSC for the first year, and thereafter the chairman will be selected alternately, on an annual basis, by Sangamo or by Biogen Idec. The chairman shall be responsible for setting the agenda for meetings of the JSC, with input from the other members, and for conducting the meetings of the JSC.

(b) JSC Appointment is a Right. The appointment of members of the JSC is a right of each Party and not an obligation and shall not be a "deliverable" as defined in Accounting Standards Update 2009-13 – Revenue Recognition (Topic 605): Multiple-Deliverable Revenue Arrangements, a consensus of the Financial Accounting Standards Board's Emerging Issues Task Force. Each Party shall be free to determine not to appoint members to the JSC and not replace a member of the JSC who stops serving on the JSC.

(c) Consequence of Non-Appointment. If a Party (the "*Appointing Party*") does not appoint members of the JSC, or does not replace a member of the JSC who stops serving on the JSC, it shall not be a breach of this Agreement, nor shall any consideration be required to be returned, and unless and until such persons are appointed or replaced, the other Party may discharge the roles of the JSC for which members were not appointed or replaced by the Appointing Party.

3.2 Responsibilities.

(a) Oversight. The JSC shall be responsible for oversight of the Research Programs during the Research Terms, including the Research and Development Plans, Sangamo's development of Licensed Products, pre-clinical work, IND-enabling studies, and IND submissions for the BT Program and the SCD Program. Any amendments or modifications to the Research and Development Plans shall require the approval of the JSC (except that each [***] pursuant to Section 2.7(a)) and shall be subject to the applicable terms of this Agreement, and the JSC shall be required to formally document updates to the Research and Development

Plans on a quarterly basis as part of the minutes of the quarterly meetings of the JSC. The JSC shall manage the technology transfer of Licensed Know-How (including manufacturing-related Licensed Know-How) and Program Data from Sangamo to Biogen Idec as described in a Research and Development Plan or that is otherwise reasonably requested by Biogen Idec and otherwise necessary or useful, which technology transfer shall be initiated at any time upon Biogen Idec's request. In addition to the foregoing general responsibilities, the JSC shall in particular: (i) establish and approve timelines in the Research and Development Plans, (ii) manage the overall strategy for the research and development of Collaboration Compositions of Matter and Licensed Products under the Research and Development Plans, including regulatory strategy, (iii) review and approve the draft IND for each Licensed Product, (iv) review and discuss the Clinical Development Plan under the BT Program, (v) determine the development and staging of lead and back-up Collaboration Compositions of Matter and Licensed Products, (vi) determine whether criteria set forth in a Research and Development Plan with respect to the development and staging of a Collaboration Composition of Matter or Licensed Product have been met, and (vii) make decisions on whether and how to continue activities under a particular Research and Development Plan at each decision point set forth in such Research and Development Plan based on the then-available data and results and consistent with the criteria set forth in such Research and Development Plan, including with respect to whether to terminate the activities under a Research and Development Plan for a particular Collaboration Composition of Matter or Licensed Product. The JSC will have solely the powers assigned to it in this Article 3 and elsewhere in this Agreement, and will not have any power to amend, modify, or waive compliance with this Agreement. For clarity, Sangamo, and not the JSC, will be responsible for decisions with respect to the day-to-day implementation of the activities assigned to Sangamo under the Research and Development Plans. The JSC, in its discretion, may establish subcommittees to assist the JSC in carrying out the responsibilities of the JSC.

(b) Manufacture. The JSC shall oversee the manufacture of Licensed Products and the Collaboration Compositions of Matter according to the Research and Development Plans during the Research Terms. For each Research and Development Plan, the JSC shall (i) establish the amount to be manufactured and maintained by [***]; (ii) review the manufacture of (and supply chain for) each Licensed Product to identify potential risks and, where necessary, implement through the Research and Development Plan risk management strategies; (iii) analyze and review technical and quality control issues for each Licensed Product; (iv) review any manufacturing agreements with Third Parties pursuant to which Licensed Products are manufactured; (v) review all manufacturing specifications for Licensed Products, including release specifications; and (vi) manage the transfer of manufacturing capability for Licensed Products from [***] pursuant to the Research and Development Plan in a manner to permit Biogen Idec to undertake its clinical development activities without delay.

(c) General. The JSC shall conduct its responsibilities hereunder in good faith and with reasonable care and diligence.

3.3 Meetings.

(a) The JSC shall meet in person or by teleconference not less than once per Calendar Quarter. Subject to the preceding sentence, the JSC shall meet on such dates and at such times and places as agreed to by the members of the JSC. Meetings of the JSC shall be alternately hosted by the Parties, with the host determining whether the meeting will be in person or by teleconference; provided, that at least one meeting hosted by each Party in each calendar year shall be in person. Biogen Idec shall host the first meeting of the JSC at a mutually agreeable time and place no later than sixty (60) days from the Effective Date. Each Party shall be responsible for its own expenses relating to attendance at or participation in JSC meetings.

(b) Within ten (10) days following each JSC meeting, the Party hosting the meeting shall cause to be prepared and will provide to the other Party a draft of reasonably detailed written minutes describing all matters reviewed or considered by the JSC and all determinations made and actions taken by the JSC and a summary of the reasons therefor stated by the members at the meeting. The minutes shall include any discussions relating to amendments to the Research and Development Plans and Sangamo's determinations and data with respect to preclinically or clinically significant [***] or effects of DNA-Binding Molecules pursuant to Sections 1.26 and 1.149. The minutes of any meeting of the JSC must be finalized by approval of the members of the JSC within fifteen (15) days of the meeting. The final minutes shall include the relevant executed amendments to the Research and Development Plans reflecting the discussed and approved changes. The minutes and the drafts of any minutes shall be the Confidential Information of both Parties.

3.4 Decision Making. Each Party shall be entitled to cast one vote on matters before the JSC. For the transaction of business, a quorum consisting of not less than one representative of each Party must be present at a meeting. Decisions of the JSC shall be made by unanimous approval, provided that a quorum is present. If the JSC is unable to reach agreement with respect to any decision within the scope of its authority, the Chief Executive Officer of each Party (or his/her nominee) will meet promptly to attempt to resolve the dispute by good faith negotiations. If these individuals are unable to resolve the dispute within thirty (30) days of the request for such meeting, the matter shall be decided as follows:

(a) BT Program

(i) Subject to the first sentence of Section 2.7(a), if the matter relates to the BT Program prior to the BT Trigger Date, then [***] shall have the final decision-making authority; provided that (1) [***] shall not change the Lead Candidate for the BT Program without [***] prior written consent, (2) in addition to its rights under Section 2.5(e), Biogen Idec shall have the right to change the Lead Candidate for the BT Program and approve a revised BT Development Plan related to a new Lead Candidate if Biogen Idec determines in good faith that the medical risk/benefit of the then-current Lead Candidate is so unfavorable that it would be incompatible with the welfare of patients to continue developing or commercializing such Lead Candidate and (3) [***] shall have the final decision-making authority over any decision that would change the scope or activities under the BT Program in a manner that would, if such activities were performed, trigger any Milestone Payment under the BT Program other than the milestone payment concerning dosing of a subject in the first Phase I Clinical Trial of a Licensed Product.

(ii) If the matter relates to the BT Program after the BT Trigger Date, then Biogen Idec shall have the final decision-making authority.

(b) SCD Program. If the matter relates to the SCD Program, [***] shall have the final decision-making authority; provided that [***] shall not make any decision to amend the SCD Development Plan (including its budget) that would (i) require Sangamo to perform any work with respect to any Gene other than a Gene Target or a Safe Harbor Locus or any indication other than beta thalassemia or sickle cell disease, (ii) materially increase or decrease the number of Sangamo FTEs in any functional area that are required to conduct the SCD Development Plan, (iii) allocate activities to Sangamo that are outside its expertise, (iv) impose obligations on Sangamo that conflict with any agreement as in effect prior to the Effective Date, any Third Party Licenses or any agreement with Third Party service providers or licensors or (v) cause Sangamo to incur any costs that are not fully reimbursed by Biogen Idec.

Any decision made in exercising a Party's final decision-making authority must be consistent with the terms of this Agreement and within the scope of authority delegated to the JSC under this Agreement. The Parties expressly understand and agree that the control of decision-making authority by a Party so as to resolve a dispute in the JSC for any matter will not authorize such Party to unilaterally modify or amend, waive its own compliance with, or determine the other Party's compliance with, the terms of this Agreement.

3.5 Discontinuation of the JSC. The JSC shall continue to exist until the first to occur of (a) the Parties mutually agreeing to disband the JSC and (b) the end of all Research Terms; provided that the JSC shall only have oversight over those Research Programs having a Research Term that has not terminated. Notwithstanding anything herein to the contrary, once the JSC ceases to exist, the JSC shall have no further obligations under this Agreement and Biogen Idec shall have the right to solely decide, without consultation, any matters previously before the JSC.

3.6 Re-establishment of the JSC. At any time during the Term after the JSC ceases to exist pursuant to Section 3.5, if the Parties agree to conduct any activities under Section 2.11 for a Research Program, then the Parties shall re-establish the JSC and Biogen Idec shall have final decision-making authority with respect to the development of any additional Genes added pursuant to Section 2.11.

4 CLINICAL DEVELOPMENT AND COMMERCIALIZATION

4.1 Sangamo Responsibilities. During the Term:

(a) Sangamo shall use Commercially Reasonable Efforts to conduct the First in Human Trial as described in the BT Development Plan until the earlier of (i) Phase I Completion and (ii) Biogen Idec's assumption of activities under the BT Development Plan pursuant to Section 2.13(a), and Sangamo shall, unless Biogen Idec has exercised its step-in rights pursuant to Section 2.13(a) prior to completion of the First in Human Trial, use Commercially Reasonable Efforts to deliver to Biogen Idec a complete study report for the First in Human Trial promptly following completion of such trial. Unless otherwise agreed by the Parties or as set forth in this Agreement, Sangamo shall have no further clinical development responsibilities under this Agreement.

(b) In order to permit Biogen Idec to conduct clinical trials of Licensed Products without substantial delay, at the direction of the JSC and at least [***] prior to filing an IND for a Licensed Product in the SCD Program or anticipated Phase I Completion for the BT Program, as applicable (in each case, subject to Biogen Idec's early assumption of activities under the applicable Research and Development Plan pursuant to Section 2.13(a) and Section 2.13(b), as applicable), Sangamo will complete the transfer to Biogen Idec, in accordance with the applicable Research and Development Plan but subject to Section 2.7, or otherwise as determined by the JSC and subject to [***]'s reimbursement of [***]'s reasonable [***] costs and reasonable external costs to conduct such transfer, of all Licensed Know-How (including manufacturing, synthesis and testing protocols and documentation) necessary or useful for Biogen Idec to manufacture clinical supplies of the applicable Licensed Product according to the specifications and manufacturing techniques then in use by Sangamo for such Licensed Product. Sangamo will provide such technical assistance to Biogen Idec as necessary to complete the transfer of such Licensed Know How in accordance with the applicable Research and Development Plan. In addition, no later than [***] after (x) the SCD Step-In Date or (x) the earlier of Biogen Idec's assumption of activities under the BT Development Plan pursuant to Section 2.13(a) and Phase I Completion in the BT Program, as applicable, (i) Sangamo will supply to Biogen Idec any then-existing supplies of the applicable [***] Controlled by Sangamo, in each case to the extent specific to Licensed Products (except to the extent that any such supplies need to be retained by Sangamo or its manufacturer, consistent with the requirements of regulatory authorities or otherwise as required by law), and (ii) to the extent any manufacturing contracts between Sangamo and a Third Party contract manufacturer are specific to the applicable Licensed Product, Sangamo will, if permitted under the terms of the contract and requested by Biogen Idec, assign such contract to Biogen Idec.

(c) Promptly after each of (i) [***] following the filing of the IND for a Licensed Product (or the day of release of any clinical hold placed on the IND during the [***] after filing), with respect to the SCD Program (or immediately prior to filing if the JSC determines that Biogen Idec will file such IND) and (ii) Phase I Completion with respect to the BT Program, as applicable, in the case of clause (i) and (ii) subject to Biogen Idec's early assumption of activities under the applicable Research and Development Plan pursuant to Section 2.13(a) and Section 2.13(b), as applicable:

(x) Biogen Idec shall assume sole control, subject to Section 4.2(b), for all development, regulatory, manufacturing and commercialization activities for each Licensed Product from the applicable Research Program, and

(y) Sangamo shall:

(A) promptly [***] transfer to Biogen Idec all [***] generated prior to such assignment,

(B) to the extent not earlier transferred in accordance with this Agreement, promptly transfer to Biogen Idec all [***], and all [***] and [***] in Sangamo's possession and control, in each case that are required by law or regulation to be maintained by the holder of such IND,

*** CONFIDENTIAL PORTIONS OMITTED AND FILED SEPARATELY WITH THE COMMISSION

(C) for any information and materials of the type otherwise described in clause (B) of this Section 4.1(c)(y) but that are in Sangamo's control and in the possession of a Third Party service provider, either [***] to Biogen Idec such contract (which contract Biogen Idec shall have the option to assume), to the extent [***] and if not [***] (either by its terms or because it does not relate solely to such Licensed Product), provide access to such information and materials to Biogen Idec, and Sangamo shall bear the costs for maintenance of and Biogen Idec's access to such information and materials,

(D) provide Biogen Idec access, to the extent reasonably requested by Biogen Idec and necessary or useful for Biogen Idec to pursue the clinical development and Marketing Approval of (or the maintenance of Marketing Approval of) such Licensed Product, to any information and materials in Sangamo's control that are related to such

Licensed Product and used or generated in conducting activities under the applicable Research and Development Plan but are not addressed in clause (B) or (C) of this Section 4.1(c)(y), which information and materials Sangamo shall maintain for [***] following assignment of the IND to Biogen Idec and shall not thereafter destroy without providing Biogen Idec notice and the opportunity to access such information and materials, and

(E) provide, at Biogen Idec's expense, a reasonable amount of technical assistance as Biogen Idec may reasonably request to assist Biogen Idec in the clinical development, Marketing Approval and commercialization of such Licensed Product during the Royalty Term for such Licensed Product, to the extent that Sangamo has the relevant expertise and then available capacity by functional group or is capable of acquiring sufficient capacity through the use of Commercially Reasonable Efforts.

4.2 Biogen Idec Responsibilities. During the Term:

(a) Subject to Section 4.2(b), Biogen Idec shall be solely responsible for and have sole discretion over (i) the planning and conduct of (other than the First in Human Trial under the BT Program unless Biogen Idec exercises its rights hereunder to take over such activities), and expenses associated with, clinical trials of Licensed Products (other than expenses with respect to the First in Human Trial under the BT Program that are Sangamo's responsibility in accordance with the terms of this Agreement); (ii) all regulatory filings and interactions with regulatory agencies with respect to Licensed Products, except those filings and interactions in connection with any IND for the BT Program and, if the JSC determines that Sangamo will file the IND for the SCD Program, the SCD Program, or the First in Human Trial (unless Biogen Idec exercises its rights to take over such activities); (iii) pursuing and maintaining Marketing Approvals for Licensed Products and expenses related to obtaining and maintaining such Marketing Approvals; and (iv) commercialization of Licensed Products in the Territory and expenses associated with the commercialization of Licensed Products.

(b) Biogen Idec shall use Commercially Reasonable Efforts to develop, seek and obtain Marketing Approval for and commercialize (i) at least one Licensed Product for beta thalassemia and (ii) at least one Licensed Product for sickle cell disease, in each case (i) and (ii) [***]. In addition, without limiting the foregoing, Biogen Idec shall use Commercially Reasonable Efforts to achieve First Commercial Sale of a Licensed Product for beta thalassemia in [***].

4.3 Clinical Development.

(a) With respect to a Licensed Product arising from in the SCD Program, upon the SCD Step-In Date in the SCD Program, and with respect to a Licensed Product arising from the BT Program, upon the earlier of Biogen Idec's early assumption of activities under the applicable Research and Development Plan pursuant to Section 2.13(a) and Phase I Completion in the BT Program, Biogen Idec shall, itself or through its Affiliates and Sublicensees, complete clinical development activities and seek Marketing Approval for such Licensed Product in accordance with a Clinical Development Plan for such Licensed Product, subject to Section 4.2(b). Each Clinical Development Plan will be developed, and amended from time to time, by Biogen Idec. Biogen Idec shall provide each Clinical Development Plan and each amendment thereto to Sangamo for review and discussion, and shall consider in good faith Sangamo's reasonable comments thereto that are promptly delivered to Biogen Idec.

(b) Biogen Idec shall keep Sangamo informed about the status of Biogen Idec's clinical development activities with respect to Licensed Products by providing, on an annual basis, a summary of such activities, including a copy of the clinical study report synopsis for each clinical trial of a Licensed Product, conducted during the prior year.

(c) Sangamo shall keep Biogen Idec informed on an ongoing basis of all relevant information in its possession or which it becomes aware of that is Controlled by Sangamo regarding (i) any material feedback from regulatory authorities or (ii) material manufacturing-related problems or defects, in each case that is related to Collaboration Compositions of Matter, Licensed Products or other products developed using the Core Technology, and that would be reasonably expected to affect the development or commercialization of Licensed Products, including such information that is discovered during pre-clinical and clinical development, as applicable. Sangamo shall use reasonable efforts to obtain from its licensees and collaborators the right to provide such information to Biogen Idec.

(d) Six (6) months prior to the anticipated first IND filing for any Licensed Product, the Parties shall meet to negotiate and prepare a detailed safety data exchange agreement outlining each Party's respective obligations with respect to pharmacovigilance activities, including timely transferring information related to adverse events or adverse reactions and maintaining a global safety database. Such agreement will provide for a process by which Sangamo shall provide Biogen Idec all relevant information in its possession or which it becomes aware of regarding the safety and tolerability of Collaboration Compositions of Matter, Licensed Products or other products developed using the Core Technology, to the extent relevant to Licensed Products, in each case individually and as applicable to the Core Technology, including information discovered during pre-clinical and clinical development.

(e) Biogen Idec acknowledges and agrees that pursuant to the CIRM Award, CIRM has the right to attend as an observer key FDA meetings regarding the Licensed Products, including pre-pre-IND meetings, pre-IND meetings, clinical milestone meetings and clinical hold meetings, and to review any data packages or other information, including Confidential Information of each Party, provided to the FDA in connection with any such meetings, as well as all minutes related thereto, and to share such information with CIRM's confidential advisors. Solely to the extent required by applicable law (including applicable regulations and CIRM policies), as may be amended or supplemented after the Execution Date, or the CIRM Award (as such award is in effect on the Execution Date), Sangamo shall have the right, subject to Section 10.3, to provide all such information to CIRM and to permit CIRM to attend such meetings. To the extent that Biogen Idec conducts any activities subject to the CIRM Award, Biogen Idec shall promptly provide all such information to Sangamo and shall notify Sangamo of all such meetings, as soon as practicable after scheduling thereof. In addition, Biogen Idec shall provide Sangamo with all such information necessary for Sangamo to comply with its obligations under the CIRM Award, as reasonably requested by Sangamo.

4.4 Commercialization.

(a) As between the Parties, and subject to Sangamo's Co-Promotion Option and Section 4.2(b), Biogen Idec shall be solely responsible, at its sole expense, for all commercialization of Licensed Products, including: (i) developing and executing a commercial launch and pre-launch plan, (ii) negotiating with applicable governmental authorities regarding the price and reimbursement status of each Licensed Product; (iii) marketing and promotion; (iv) booking sales and distribution and performance of related services; (v) handling all aspects of order processing, invoicing and collection, inventory and receivables; and (vi) providing customer support, including handling medical queries and performing other related functions.

(b) In performing its marketing, promotion and other commercialization activities for Licensed Products, Biogen Idec shall comply with all applicable laws and regulations.

(c) Biogen Idec shall keep Sangamo informed about the status of Biogen Idec's commercialization activities with respect to Licensed Products by providing, on an annual basis, a summary of such activities conducted during the prior year.

4.5 Co-Promotion Option.

(a) Sangamo shall have an option to co-promote each Licensed Product in the United States for beta thalassemia and sickle cell disease (the "*Co-Promotion Option*"), in accordance with this Section 4.5 and Exhibit B. Sangamo may exercise its Co-Promotion Option by providing written notice to Biogen Idec no later than [***]. Within [***] after Sangamo exercises its Co-Promotion Option with respect to the Licensed Products, Sangamo and Biogen Idec shall enter into a co-promotion agreement consistent with this Section 4.5 and Exhibit B ("*Co-Promotion Agreement*") for the Licensed Products (with respect to the Co-Promotion Agreement, each such Licensed Product, a "*Co-Promotion Product*"), pursuant to which Biogen Idec will compensate Sangamo for its co-promotion activities.

(b) If, notwithstanding the Parties' obligations in Section 4.5(a), the Parties fail to execute a Co-Promotion Agreement within [***] after Sangamo's exercise of its Co-Promotion Option, the disputed terms of such agreement shall be referred to the Parties' respective Chief Executive Officers (or their designees) for resolution. If these individuals are unable to resolve any of the remaining disputed terms of the Co-Promotion Agreement within [***] of the request for such resolution, then the [***] shall determine all such remaining disputed terms. Within [***] after the determination of such terms, [***] shall notify [***] of its acceptance or rejection of such terms, which election shall be at [***]. Upon [***] acceptance of such terms, such terms shall be binding on the Parties, and the Parties shall promptly enter into an agreement containing such terms. Upon Sangamo's rejection of such terms, [***].

(c) Upon Sangamo's exercise of the Co-Promotion Option in accordance with this Section 4.5, the Parties shall coordinate all sales efforts and field activities with respect to the Licensed Products in the United States for beta thalassemia and sickle cell disease under the direction of Biogen Idec, and such efforts and activities shall be more fully described in the Co-Promotion Agreement.

(d) Notwithstanding the foregoing, upon any Change of Control of Sangamo or acquisition resulting in a Competing Business Combination under Section 6.3(d), the Co-Promotion Option (if not yet exercised pursuant to Section 4.5(a)) or Co-Promotion Agreement, as applicable, shall terminate on the date of such Change of Control or the closing of such acquisition, as applicable. If, on the date of such Change of Control or the closing of such acquisition, as applicable, Sangamo has exercised the Co-Promotion Option but the Parties have not yet entered into the Co-Promotion Agreement, Biogen Idec shall have no further obligation to enter into a Co-Promotion Agreement.

5 SUPPLY AND MANUFACTURE

5.1 Responsibilities. Each Party shall be responsible for manufacturing Collaboration Compositions of Matter and Licensed Products to be used in the activities conducted by such Party, either directly or through one or more Affiliates or Third Parties. For the avoidance of doubt, only Biogen Idec or its designees shall commercially manufacture Collaboration Compositions of Matter and Licensed Products. Sangamo's manufacturing activities shall be in accordance with the applicable Research and Development Plan. Upon Biogen Idec's reasonable request after consultation with Sangamo following completion of due diligence on a Third Party manufacturer engaged by Sangamo with respect to activities under

this Agreement, Sangamo shall cease using such Third Party manufacturer with respect to such activities and engage a Third Party manufacturer requested by Biogen Idec to perform such activities as soon as thereafter practicable. In such event, all timelines in this Agreement or under a Research and Development Plan for completing activities, if related to or dependent on manufacturing activities, shall be extended by the amount of time between the date of Sangamo's cessation of using such Third Party manufacturer and the date on which Biogen Idec's requested manufacturer is at the same stage of manufacturing qualification, validation and scale at which Sangamo's manufacturer was at the time of such cessation, except to the extent any delay in engaging a Third Party manufacturer requested by Biogen Idec or in having any such Third Party manufacturer reach the same stage of activity as the manufacturer being replaced is a result of Sangamo's or its Affiliate's or agent's failure to use reasonable efforts to engage such manufacturer or have such manufacturer reach such stage, respectively. Any such switch in manufacturer shall be subject to Section 2.7.

5.2 Requirements regarding Supply and Manufacture. Each of the Parties agrees that all supply and manufacture of Collaboration Compositions of Matter and Licensed Products pursuant to this Agreement, whether by a Party or a Third Party, shall comply with all applicable legal and regulatory requirements, including applicable cGMP.

6 GRANT OF LICENSES

6.1 Grants by Sangamo

(a) License Grant.

(i) Subject to the terms and conditions of this Agreement, Sangamo hereby grants to Biogen Idec an exclusive, royalty-bearing license, with the right to sublicense as provided in Section 6.1(c), under the Licensed Technology, (A) to make, have made, use, have used, Research, develop, market, supply, sell, offer for sale, export, have exported, import and have imported Licensed Products in the Field in the Territory and (B) subject to Section 6.1(b), to make, have made and use Collaboration Compositions of Matter that are incorporated into or used with respect to Licensed Products (including use with respect to the manufacture of Licensed Products), for the sole purpose of Researching, developing, manufacturing, using or selling Licensed Products.

(ii) Sangamo hereby grants to Biogen Idec for any and all purposes a non-exclusive, worldwide, royalty-free, fully-paid, perpetual, irrevocable license, with the right to grant sublicenses through multiple tiers license under Sangamo's interest in (A) all Other IP and (B) all Product-Specific IP, in each case (A) and (B) to the extent claiming inventions conceived, discovered, developed, invented or otherwise made by Sangamo, its Affiliates and its or their respective employees, agents or Subcontractors during the Term in connection with the conduct of activities under any Research and Development Plan or other activities conducted by Sangamo in connection with its participation in the JSC or its fulfillment of obligations under this Agreement.

(b) Restrictions. Notwithstanding anything in this Agreement to the contrary, the licenses under Section 6.1(a) do not grant the right to discover, design or optimize [***], and Biogen Idec shall not conduct or have conducted any such activities under this Agreement. To the extent that it applies to [***].

(c) Sublicenses.

(i) *Affiliates.* Subject to the terms and conditions of this Agreement and the applicable Third Party Licenses, Biogen Idec may grant to one or more of its Affiliates a sublicense under the rights granted to Biogen Idec under Section 6.1(a). Biogen Idec shall remain responsible for the performance of such Affiliates under such rights to the same extent as if such activities were conducted by Biogen Idec, and shall remain responsible for any payments due hereunder with respect to activities of such Affiliates.

(ii) *Third Parties.* Subject to the terms and conditions of this Agreement and the applicable Third Party Licenses, Biogen Idec may grant, through one or more tiers, to Third Parties a sublicense under the rights granted to Biogen Idec under Section 6.1(a). Biogen Idec shall remain responsible for the performance of any of its Sublicensees under such rights to the same extent as if such activities were conducted by Biogen Idec, and shall remain responsible for any payments due hereunder with respect to activities of the Sublicensee.

(iii) *Sublicense Survival*. In the event of termination of this Agreement by Sangamo pursuant to Section 14.4 or 14.5, any permitted sublicense under Section 6.1(c)(ii) shall, at the Sublicensee's option, survive such termination, provided that the Sublicensee is not in material breach of any of its obligations under such sublicense. In the event of termination of this Agreement by Biogen Idec pursuant to Section 14.4, 14.5, 14.6 or 14.7 (to the extent such sublicenses are related to Licensed Products that are not Safety Terminated Products), any permitted sublicense under this Section 6.1(c)(iii) shall, at the Sublicensee's option and with Sangamo's prior written consent, not to be unreasonably withheld, conditioned, or delayed, survive such termination, provided that the Sublicensee is not in material breach of any of its obligations under such sublicense. In order to effect this provision, at the request of the Sublicensee and, if applicable, with consent of Sangamo pursuant to the preceding sentence, Sangamo shall enter into a direct license with the Sublicensee on substantially the same terms as the sublicense, provided that Sangamo shall not be required to undertake obligations in addition to those required by this Agreement, and that Sangamo's rights under such direct license shall be consistent with its rights under this Agreement, taking into account the scope of the license granted under such direct license.

(iv) *Notice.* Biogen Idec shall provide Sangamo with of a copy of each executed sublicense agreement within thirty (30) days after execution thereof, which shall be treated by Sangamo as Biogen Idec's Confidential Information, provided that with respect to any sublicense agreement that includes a sublicense under a Third Party License that requires Sangamo to provide the applicable Third Party licensor a copy of any sublicense agreement or a summary of the terms of such sublicense agreement, Sangamo shall be permitted to provide such Third Party licensor with such copy or summary. Sangamo agrees that prior to providing a copy of such sublicense to Sangamo, Biogen Idec may, except to the extent otherwise required under any Existing Third Party License, redact certain terms of any such sublicense agreement the extent not pertinent to an understanding of a Party's obligations or benefits under this Agreement or a verification of compliance with the requirements of this Agreement.

(v) *Requirements*. Each agreement in which Biogen Idec grants a sublicense under the license granted in Section 6.1(a) shall be subject to the applicable terms and conditions of this Agreement and any Third Party Licenses sublicensed to the Sublicensee, and shall expressly include the terms set forth in Schedule 6.1(c)(v) with respect to each Third Party License sublicensed to the Sublicensee.

(vi) *Direct Sublicense from Sangamo.* If Biogen Idec or its Sublicensee cannot grant further sublicenses under a particular Third Party License, then at Biogen Idec's request in conjunction with Biogen Idec's granting of a sublicense to a Sublicensee under this Section 6.1(c), or its Sublicensee's granting a further sublicense, subject to Section 6.1(c)(vii), Sangamo shall grant a sublicense under such Third Party License to such Sublicensee (or further sublicensee) for no additional consideration to Sangamo (but subject to Section 6.1(c)(vii)) and otherwise on terms that are consistent with the Third Party License, the sublicense granted by Biogen Idec to such Sublicensee and the terms of this Agreement.

(vii) *Payments under Third Party Licenses*. Notwithstanding anything in Section 9.4 to the contrary, Biogen Idec shall be solely responsible for paying any sublicense issuance and sublicense maintenance fees owed to Third Parties pursuant to Third Party Licenses specifically attributable to the grant of a sublicense by Biogen Idec or its Sublicensees or by Sangamo pursuant to Section 6.1(c)(vi), to the extent, in the case of Existing Third Party Licenses, that such sublicense issuance and sublicense maintenance fees have been disclosed to Biogen Idec prior to the Execution Date (by providing a copy of the applicable agreement without such terms redacted).

(d) Research. Prior to the commencement by Biogen Idec or its Affiliate, Sublicensee or subcontractor of any Research of Licensed Products (other than under a Research and Development Plan), Biogen Idec shall notify Sangamo, summarizing the proposed activities. Upon Sangamo's request, the Parties will promptly thereafter discuss such proposed activities, and Biogen Idec will respond to any reasonable inquiries of Sangamo related to such proposed activities. At Biogen Idec's sole expense, Sangamo shall provide any Materials reasonably requested by Biogen Idec to perform such activities.

6.2 Grant by Biogen Idec.

(a) Subject to the terms and conditions of this Agreement, Biogen Idec hereby grants to Sangamo a royalty-free, non-exclusive license, with the right to grant sublicenses only to permitted Subcontractors under Section 2.6, under all Biogen Idec Patents and all Know-How Controlled by Biogen Idec and its Affiliates as of the Effective Date or that come into the Control of Biogen Idec and its Affiliates during the Research Term solely as necessary to perform the activities to be performed by or on behalf of Sangamo under each Research Program during the applicable Research Term.

(b) Biogen Idec hereby grants to Sangamo a non-exclusive, worldwide, royalty-free, fully-paid, perpetual, irrevocable license, with the right to grant sublicenses through multiple tiers, to practice any Know-How made by or on behalf of Biogen Idec or its Affiliates under this Agreement that is an enhancement, modification or improvement to any Licensed Technology, and any Patent Rights claiming any such Know-How, in connection with any programs, products or services that are related to or use (i) the Core Technology, if such Know-How was made in the course of activities involving Zinc Finger Protein(s) and (ii) Sangamo's DNA-binding technology, if such Know-How was made in the course of activities involving TALE Protein(s) or CRISPR/Cas system(s), excluding during the Term any such use that is within the scope of the license granted to Biogen Idec in Section 6.1(a) or that is prohibited during the Term or thereafter pursuant to Section 6.3. On a Calendar Quarter basis, Biogen Idec shall notify Sangamo of all such material Know-How and Patent Rights not previously disclosed to Sangamo, through the JSC or directly to Sangamo after the JSC ceases to exist.

6.3 Exclusivity.

(a) Collaboration Composition of Matter. During the Term, neither Sangamo nor any of its Affiliates shall work independently of this Agreement for itself or any Affiliate or Third Party (including the grant of any license, option or other right to any Third Party) with respect to the discovery, research, development, registration, manufacture or commercialization of any Collaboration Composition of Matter for any purpose.

(b) Certain DNA-Binding Molecules. During the Term, neither Sangamo nor any of its Affiliates shall grant rights to any Third Party to any DNA-Binding Molecule described in clause (a) of the definition of Collaboration Composition of Matter, without applying the last paragraph of such clause and by substituting the "Specifically Binds" requirement (in both the definition of Collaboration Composition of Matter and DNA-Binding Molecule) for [***], that Sangamo reasonably determines, prior to the Effective Date, in the course of performing work pursuant to a Research and Development Plan or pursuant to Section 2.12, [***].

(c) Competing Program. Notwithstanding Section 6.3(a), if during the Term Sangamo acquires a Third Party or a portion of the business of a Third Party (whether by merger, stock purchase or purchase of assets) that is, prior to such acquisition, engaged in researching, developing or commercializing a Collaboration Composition of Matter for the diagnosis, treatment or prevention of beta thalassemia or sickle cell disease (a "*Competing Program*"), Sangamo shall use Commercially Reasonable Efforts to divest such Competing Program promptly following the closing of such acquisition, and in any event shall complete such divestment within one (1) year after the closing of such acquisition; provided that such time period shall be extended, and Sangamo shall not be in breach of this Section 6.3(c), if at the expiration thereof (and any extensions thereto) Sangamo provides competent evidence of reasonable ongoing efforts to divest such Competing Program; further provided that Sangamo shall cease all research, development and commercialization activities with respect to such Competing Program if Sangamo has not completed such divestment within eighteen (18) months after the closing of such acquisition (it being understood that Sangamo may thereafter continue its efforts to divest such asset). In addition, in the event of a Change of Control of Sangamo

during the Term, the obligations of Sangamo under this Section 6.3(c) shall not apply to any Collaboration Composition of Matter that (1) is owned or controlled by a Third Party described in the definition of "Change of Control" or its Affiliates prior to or as of the closing of such Change of Control or (2) becomes owned or controlled by such Third Party or its Affiliates after the closing of such Change of Control if such Collaboration Composition of Matter is not developed using any Know-How, and is not covered by any Patent Rights, that were controlled by Sangamo prior to the closing of the Change of Control.

(d) Competing Business Combination. Notwithstanding Section 6.3(a) and in addition to the applicable effects of Section 6.3(c), if any, if during the Term Sangamo or any of its Affiliates merges or consolidates with, or otherwise is acquired by or acquires, a Third Party or a portion of the business of a Third Party wherein the business that is acquired by or that acquires Sangamo or any of its Affiliates includes a product or rights to a product in a Phase II Clinical Trial or a Pivotal Clinical Trial or that is being commercialized in any of the foregoing cases for the [***], Sangamo and the acquirer or acquired party, as applicable, a "*Competing Business Combination*"), then upon the closing of such acquisition:

(i) The Co-Promotion Option or Co-Promotion Agreement shall terminate pursuant to the terms of Section 4.5(d), as applicable.

(ii) Biogen Idec's obligations under Sections 4.3(b) and 4.4(c) shall terminate.

(iii) Biogen Idec's shall assume the activities under the BT Development Plan and SCD Development Plan pursuant to Section 2.13(c).

(iv) The JSC shall cease to exist pursuant to Section 3.5.

In addition, if during the Term Sangamo or any of its Affiliates merges or consolidates with, or otherwise is acquired by or acquires, a Third Party or a portion of the business of a Third Party wherein the business that is acquired by or that acquires Sangamo or any of its Affiliates includes a product or rights to a product [***] or that is being [***], then upon the closing of such acquisition, Biogen Idec's obligations under Sections 4.3(b) and 4.4(c) with respect to such Licensed Product shall terminate.

(e) [***] Compositions of Matter.

(i) If prior to or during the Term Sangamo or an Affiliate thereof is engaged in preclinically or clinically developing or commercializing an [***] Composition of Matter for the purpose of diagnosing, treating or preventing beta thalassemia or sickle cell disease (a "*Competing* [***] *Program*"), Sangamo or its Affiliate, as applicable, shall immediately cease all activities with respect to such Competing [***] Program. For clarity, Sangamo and its Affiliates may continue activities with respect to [***] Compositions of Matter so long as such activities are directed toward indications other than beta thalassemia or sickle cell disease and Sangamo shall provide Biogen Idec written updates of such activities on a semiannual basis during each calendar year of the Term (such semiannual updates, the "[***]

Updates"), except to the extent Sangamo is restricted from providing such [***] Updates by confidentiality obligations to Third Parties. With respect to any agreement that Sangamo enters into after the Execution Date, Sangamo shall use reasonable efforts to ensure that Sangamo is not restricted from providing to Biogen Idec any [***] Updates.

(ii) Without limiting Section 6.3(e)(iii), any agreement that Sangamo enters into after the Effective Date that incorporates, uses or is otherwise related to [***] Compositions of Matter (including any collaboration, license, sponsored research or contract manufacturing agreement, or any agreement with a transplant center, cell bank or other service provider) shall contain a provision that prohibits the other party to such agreement from engaging in a Competing [***] Program.

(iii) If at any time during the Term, Sangamo seeks to grant any rights to a Competing [***] Program in the Territory, Sangamo shall provide Biogen Idec with written notice thereof, which notice shall identify the applicable countries of the Territory to which the applicable grant of rights would apply, together with such information and data in Sangamo's control that would be reasonably useful for Biogen Idec to determine whether to exercise its right under this Section 6.3(e)(iii) (the "[***] *ROFN Notice*"). Biogen Idec shall then have a right of first negotiation on the terms and conditions set forth in this Section 6.3(e)(iii). In the event Biogen Idec wishes to exercise its right of first negotiation with respect to such Competing [***] Program identified in the applicable [***] ROFN Notice, it shall do so in writing (the "[***] *ROFN Exercise Notice*") no later than [***] after Biogen Idec's receipt of the applicable [***] ROFN Notice (the "[***] *ROFN Exercise Period*"). Upon Sangamo's receipt of the applicable [***] ROFN Exercise Notice, Sangamo and Biogen Idec shall negotiate in good faith to attempt to reach agreement on the terms of a development and commercialization agreement for the Competing [***] Program in the applicable countries of the Territory similar to the terms of this Agreement. If (A) the Parties do not enter into such development and commercialization agreement within [***] of Sangamo's receipt of the applicable [***] ROFN Exercise Notice, (B) Biogen Idec fails to respond during the applicable [***] ROFN Exercise Period or (C) Biogen Idec notifies Sangamo that it elects not to exercise such negotiation right, Sangamo shall be free to seek to enter into an agreement granting rights to a Competing [***] Program in the countries in the Territory identified in the applicable [***] ROFN Notice with a Third Party; provided that in the event Sangamo does not enter into such an agreement within [***] from (x) in the case of clause (A), expiration of such [***] period or (y) in the case of clauses (B) and (C), expiration of the [***] ROFN Exercise Period (or the earlier delivery of notice by Biogen Idec to Sangamo that it elects not to exercise such negotiation right), Sangamo shall thereafter be obligated to provide to Biogen Idec an [***] ROFN Notice and otherwise comply with this Section 6.3(e)(iii).

(f) Useful Hemoglobinopathy Genes.

(i) During the period beginning on the Effective Date and ending on the earlier of (A) the [***] of the Effective Date and (B) the termination of this Agreement under Section 14.5, 14.6 or 14.7 or under Section 14.4 for Biogen Idec's material breach, or [***] after the termination of this Agreement under Section 14.4 for Sangamo's material breach, Sangamo shall not enter into any agreement with a Third Party commercial entity under which Sangamo

grants rights under the Core Technology with respect to a particular Gene to clinically develop or commercialize a product for the treatment or prevention of sickle cell disease or beta thalassemia in the Territory where Sangamo reasonably believed at the time of entering into such agreement that employing the Core Technology in connection with such Gene would be useful for the treatment or prevention of such indications. The prohibition described in the preceding sentence shall not prevent Sangamo from performing internal pre-clinical research using such Gene, engaging commercial entities to conduct research and pre-clinical development activities on Sangamo's behalf or collaborating with non-commercial partners with respect to such Gene, in each case with respect to a product for the treatment or prevention of sickle cell disease or beta thalassemia; provided that such non-commercial partners shall be subject to the same restrictions as Sangamo in the preceding sentence with regards to entering into agreements with Third Party commercial entities granting rights under the Core Technology to commercialize any such products.

(ii) During the Target ROFN Term, if Sangamo (1) reasonably believes that employing the Core Technology with a certain Gene would be useful for the treatment or prevention of sickle cell disease or beta thalassemia and (2) seeks to grant rights related to such Gene and the Core Technology to clinically develop or commercialize a product for the treatment or prevention of sickle cell disease or beta thalassemia in the Territory, then Sangamo shall provide Biogen Idec with written notice thereof, which notice shall identify the applicable countries of the Territory to which the applicable grant of rights would apply, together with such information and data in Sangamo's control that would be reasonably useful for Biogen Idec to determine whether to exercise its right under this Section 6.3(f)(ii) (the "*Target ROFN Notice*"). Biogen Idec shall then have a right of first negotiation on the terms and conditions set forth in this Section 6.3(f)(ii). In the event Biogen Idec wishes to exercise its right of first negotiation with respect to such Gene identified in the applicable Target ROFN Notice, it shall do so in writing (the "*Target ROFN Exercise Notice*") no later than [***] after Biogen Idec's receipt of the applicable Target ROFN Notice (the "*Target ROFN Exercise Period*"). Upon Sangamo's receipt of the applicable Target ROFN Exercise Notice, Sangamo and Biogen Idec shall negotiate in good faith to attempt to reach agreement on the terms of a development and commercialization agreement for the Gene in the applicable countries of the Territory similar to the terms of this Agreement. If (A) the Parties do not enter into such agreement within [***] of Sangamo's receipt of the applicable Target ROFN Exercise Notice, (B) Biogen Idec fails to respond during the applicable Target ROFN Exercise Period or (C) Biogen Idec notifies Sangamo that it elects not to exercise such negotiation right, Sangamo shall be free to seek to enter into an agreement granting rights to the applicable Gene in the countries in the Territory identified in the Target ROFN Notice with a Third Party; provided that in the event Sangamo does not enter into such an agreement within [***] from (x) in the case of clause (A), expiration of such [***] period or (y) in the case of clauses (B) and (C), expiration of the Target ROFN Exercise Period (or the earlier delivery of notice by Biogen Idec to Sangamo that it elects not to exercise such negotiation right), Sangamo shall thereafter be obligated to, prior to entering into any such agreement, resubmit the Target ROFN Notice and enter into good faith negotiations with Biogen Idec regarding such rights as specified above in this Section 6.3(f)(ii) at Biogen Idec's request.

(g) Certain Existing Licenses and Materials Supply. Biogen Idec acknowledges that Sangamo, prior to the Execution Date, (i) entered into agreements pursuant to which it granted licenses to Third Parties with respect to [***] of the Core Technology and other DNA-binding technologies and that notwithstanding anything to the contrary in this Section 6.3, such licenses are not prohibited by this Section 6.3, and (ii) has provided Zinc Finger Proteins that Specifically Bind Gene Targets to certain researchers as described on Schedule 6.3(g), whose activities with such materials may continue during the Term, and that notwithstanding anything to the contrary in this Section 6.3, such activities are not prohibited by this Section 6.3.

6.4 No Implied Rights. Except as expressly provided in this Agreement, neither Party shall be deemed by estoppel, implication or otherwise to have granted the other Party any license or other right with respect to any intellectual property of such Party.

6.5 Negative Covenant. Each Party covenants that it will not knowingly use or practice any of the other Party's intellectual property rights licensed to it under this Article 6 except for the purposes expressly permitted in the applicable license grant.

6.6 Third Party Licenses. The licenses granted to Biogen Idec in Section 6.1(a) include sublicenses under Licensed Technology licensed to Sangamo pursuant to Third Party Licenses, which sublicenses are subject to the terms set forth on Schedule 6.6(a), which terms Biogen Idec hereby acknowledges. Schedule 6.6(b) sets forth those obligations under the Third Party Licenses that are obligations of Biogen Idec under this Agreement. Biogen Idec acknowledges that certain of the licenses granted to Sangamo under Third Party Licenses are non-exclusive, and that Biogen Idec's licenses with respect to the relevant Licensed Technology are exclusive only with respect to Sangamo, and not with respect to its licensor. Sangamo shall promptly provide to Biogen Idec copies of any notices required to be given to any Third Party licensors (a) of Existing Third Party Licenses, on account of the execution of this Agreement (or any other sublicense executed under this Agreement), (b) of Third Party Licenses entered into after the Effective Date, on account of the grant of a sublicense to Biogen Idec, and (c) of any Third Party License that is terminated during the Term, wherein such notice would be required upon such termination to effect the applicable sublicensee survival provision with respect to Biogen Idec's rights under this Agreement. Sangamo agrees that it shall not provide a copy of this Agreement to any Third Party licensor except to the extent otherwise required under the applicable Third Party License. Prior to providing any such copies, Sangamo shall, (1) unless otherwise required under the applicable Third Party License, redact the terms of this Agreement to the extent not pertinent to an understanding of a Party's obligations or benefits under this Agreement or a verification of compliance with the applicable Third Party License; (2) provide Biogen Idec a proposed redacted version of this Agreement within a reasonable amount of time to permit Biogen Idec to review and comment thereon, and consider in good faith and take into account and implement Biogen Idec's reasonable comments with respect to any such proposed redactions; and (3) provide to Biogen Idec a copy of the Agreement provided to the applicable Third Party licensor. Promptly following the Effective Date, Sangamo shall use reasonable efforts to seek to amend to the MIT Agreement and the Utah Agreement to conform the existing indemnification, insurance and mediation/arbitration provisions in such agreements to Biogen Idec's standard terms for such provisions set forth on Schedule 6.6(c). If any such proposed

amendment would include additional payments to the licensor in connection with entering into such amendment, Sangamo shall disclose to Biogen Idec the additional payment terms associated with such amendment, and upon Biogen Idec's written agreement, Sangamo shall enter into such amendment. Biogen Idec shall be solely responsible for the [***] of aggregate payments incurred by Sangamo and owed to the licensors in connection with entering into such amendments, and the Parties shall share equally all such amounts in excess of [***]. Biogen Idec shall pay all amounts it owes to Sangamo under the preceding sentence within forty-five (45) days after receipt of invoice therefor.

7 REPRESENTATIONS AND WARRANTIES

7.1 Mutual Representations. Each Party represents and warrants to the other Party as follows as of the Execution Date and the Effective Date:

(a) Organization. Such Party is duly organized, validly existing and in good standing under the laws of the jurisdiction in which it is organized.

(b) Authorization and Enforcement of Obligations. Such Party: (i) has the requisite power and authority and the legal right to enter into this Agreement and to perform its obligations hereunder, (ii) has the requisite resources and expertise to perform its obligations hereunder and (iii) has taken all requisite action on its part to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder. This Agreement has been duly executed and delivered on behalf of such Party, and constitutes a legal, valid, binding obligation, enforceable against such Party in accordance with its terms.

(c) Consents. All necessary consents, approvals and authorizations of all governmental authorities and other persons or entities required to be obtained by such Party in connection with the execution and delivery of this Agreement have been obtained.

(d) No Conflict. The execution and delivery of this Agreement and the performance of such Party's obligations hereunder: (i) do not conflict with or violate any requirement of applicable laws, regulations or orders of governmental bodies, (ii) do not conflict with, or constitute a breach or default under, any contractual obligation of such Party, and (iii) do not conflict with or result in a breach of any provision of the organizational documents of such Party.

7.2 Additional Sangamo Representations. Sangamo further represents and warrants to Biogen Idec as of the Execution Date and the Effective Date, and with respect to Sections 7.2(a), 7.2(f) and 7.2(h)(ii), covenants during the Term as follows; provided that, Sangamo may (1) supplement any schedule referred to in this Section 7.2 or (2) add one or more new schedules to this Section 7.2 with respect to the applicable representation and warranty made as of the Effective Date in each case ((1) and (2)) within three (3) days following the HSR Clearance Date, but any such supplement or new schedule may only contain information arising after the Execution Date and may not correct, modify or delete any information set forth in any such schedule on the Execution Date:

(a) No Conflicts. Sangamo has not granted, and will not grant during the Term, any rights that are inconsistent with the rights granted to Biogen Idec herein. Neither Sangamo nor its Affiliates has entered into any agreement, arrangement or understanding with any Third Party that is inconsistent with the provisions of this Agreement. Sangamo has the right to grant the license granted in Section 6.1(a).

(b) Litigation. Except as set forth in Schedule 7.2(b), there are no actions, suits, proceedings or investigations pending or, to its knowledge, threatened against Sangamo before any court, government or regulatory body, agency, commission, official or any arbitrator that are reasonably expected to have an adverse effect on Sangamo's ability to consummate the transactions contemplated hereby.

(c) Sangamo Intellectual Property. Schedule 1.89 is a true, complete and accurate listing by owner, all inventor(s) with respect to any unpublished pending patent applications and first inventor only with respect to any published patent applications or issued patents, serial number, filing date, country, and status of all of the Licensed Patents. Except as set forth in Schedule 7.2(c), Sangamo owns, is the licensee in good standing of, or Controls all Licensed Technology. Except as set forth in Schedule 7.2(c), (i) there is no fact or circumstance known to Sangamo that would cause Sangamo to reasonably conclude that any of the issued patents in the Licensed Patents is invalid or unenforceable, (ii) the inventorship of each Licensed Patent owned by Sangamo and, to Sangamo's knowledge, of each Licensed Patent licensed to Sangamo, is properly identified on each patent, (iii) all official fees, maintenance fees and annuities for the Licensed Patents owned by Sangamo and, to Sangamo's knowledge, for the Licensed Patents licensed to Sangamo, have been paid and all administrative procedures with governmental agencies have been completed for the Licensed Patents owned by Sangamo and, to Sangamo's knowledge, for the Licensed Patents licensed to Sangamo, such that the Licensed Patents owned by Sangamo and, to Sangamo's knowledge, the Licensed Patents licensed to Sangamo are subsisting and in good standing, (iv) Sangamo, including its employees and agents, has complied with its U.S. PTO duty of disclosure respecting the prosecution of all of the Licensed Patents, and, to Sangamo's knowledge, the licensors of the Existing Third Party Licenses, including their employees and agents, have complied with the U.S. PTO duty of disclosure respecting the prosecution of the applicable Licensed Patents and (v) none of the Licensed Patents owned by Sangamo, and to Sangamo's knowledge none of the Licensed Patents licensed to Sangamo, is currently involved in any interference, reissue, re-examination, cancellation or opposition proceeding and neither Sangamo, nor any of its Affiliates, has received any written notice from any person of such actual or threatened proceeding, (vi) Sangamo has not done or omitted to do anything which may cause the Licensed Patents in existence as of the Execution Date and the Effective Date to lapse prematurely, (vii) Sangamo has not received notice that any of the Licensed Patents is the subject of a compulsory license, and (viii) Sangamo has disclosed to Biogen Idec all information of which it is aware or which is in its possession or control that is material to the novelty or validity of the Licensed Patents in existence as of the Execution Date and the Effective Date and any challenges thereto.

(d) Third Party Intellectual Property. Sangamo is not aware of, or, alternatively, has described in Schedule 7.2(d), any Patent Right or other intellectual property rights of any Third Party that could materially adversely affect Sangamo's ability to consummate the transactions contemplated hereby with respect to (1) the experiments contemplated in the BT Development Plan set forth in Exhibit A, (2) the Core Technology or (3) Zinc Finger Proteins that Specifically Bind a Gene Target (collectively, the "*Initial Subject Matter*"). If after the Effective Date, Biogen Idec notifies Sangamo that it is interested in amending a Research and Development Plan to research or develop a TALE Protein or CRISPR/Cas system that Specifically Binds a Gene Target, then at Biogen Idec's request, Sangamo shall disclose to Biogen Idec all Patent Rights and other intellectual property rights of any Third Party of which Sangamo is then aware that could materially adversely affect Sangamo's ability to perform such amended Research and Development Plan to TALE Proteins or CRISPR/Cas systems, respectively, that Specifically Bind a Gene Target. Sangamo's disclosure pursuant to the preceding sentence shall (x) constitute a representation of Sangamo under this Agreement as of the date of such disclosure and (y) be deemed incorporated herein by reference and a part of this Agreement. To Sangamo's knowledge, except as identified in Schedule 7.2(d), (i) the exercise of Biogen Idec's rights granted under and contemplated by this Agreement with respect to the Initial Subject Matter will not infringe or conflict with any Third Party intellectual property rights and will not result in any obligation by Biogen Idec to any Third Party, and (ii) there are no pending Third Party patent applications which, if issued with the currently pending or published claims, would materially adversely affect the right of Biogen Idec to practice the Licensed Technology as contemplated by this Agreement with respect to the Initial Subject Matter. Sangamo has disclosed to Biogen Idec all information of which it is aware or which is in its possession or control that is material to evaluating any Third Party intellectual property rights which might be an obstacle to Biogen Idec's commercialization of the Licensed Technology to the extent related to the Initial Subject Matter. Sangamo agrees to promptly notify Biogen Idec in writing in the event that Sangamo becomes aware of any patent, trade secret or other right of the nature referred to in this Section 7.2(d). For the avoidance of doubt, a disclosure of any item or other matter in Schedule 7.2(d) is not an admission or indication that such item or other matter is required to be disclosed, or an admission of any current or potential obligation or liability to any Third Party or of any actual or potential breach or violation of any law or regulation.

(e) Third Party Infringement. So far as Sangamo is aware, except as set forth in Schedule 7.2(e), no Third Party is infringing or has infringed any of the Licensed Patents or has misappropriated any of the Licensed Know-How.

(f) Third Party Licenses. The Existing Third Party Licenses are in full force and effect as modified or amended prior to the Execution Date and Sangamo has provided to Biogen Idec complete and accurate copies of all such Existing Third Party Licenses. Neither Sangamo nor, to Sangamo's knowledge, any Third Party licensor is in default with respect to a material obligation under, and neither such party has claimed or, to Sangamo's knowledge, has grounds upon which to claim that the other party is in default with respect to a material obligation under, any Existing Third Party License. Except as identified in Schedule 7.2(f), Sangamo does not Control any other Third Party intellectual property necessary for Biogen Idec to practice the licenses granted under this Agreement. Sangamo shall, during the Term and with respect to each Third Party License (i) maintain in full force and effect such Third Party License; (ii) promptly provide Biogen Idec with a party's notice of any default under such Third Party License; (iii) to the extent within Sangamo's reasonable control, not take any action, fail to take any action or allow any event to occur that would give the respective Third Party licensor the right to terminate such Third Party License, without the written consent of Biogen Idec; (iv) not

amend or modify such Third Party License in a manner that will adversely affect Biogen Idec's rights under this Agreement, without Biogen Idec's prior written consent; (v) not exercise any right to itself terminate or waive any material right under, which waiver would adversely affect Biogen Idec's rights under this Agreement, such Third Party License without the prior written consent of Biogen Idec; and (vi) to the extent practicable, notify Biogen Idec prior to any termination of such Third Party License. In addition, Sangamo shall promptly provide Biogen Idec with a copy of any amendments to Third Party Licenses made after the Execution Date. Except as identified in Schedule 1.49(b), no Third Party has granted Sangamo a license to Patent Rights or Know-How that are not Controlled by Sangamo or its Affiliates but that would, if Controlled by Sangamo or its Affiliates, be within the definition of Licensed Technology (other than reagent or label licenses obtained in connection with purchases of reagents or supplies).

(g) Other Encumbrances. (i) No order has been made, no petition has been presented, no board meeting has been convened to consider a resolution, and no resolution has been passed, for the winding up or dissolution of Sangamo; (ii) no agreement or arrangement with creditors for an assignment of Sangamo's intellectual property assets for the benefit of creditors exists or has been proposed in respect of the Licensed Patents or Licensed Know-How; and (iii) no event has occurred causing, or which upon instruction or notice by any Third Party may cause, any security interest to be perfected in the Licensed Patents or Licensed Know-How.

(h) Disclosure.

(i) Sangamo, to its knowledge, has disclosed to Biogen Idec:

(A) (1) true, complete and accurate copies of all information in Sangamo's possession or Control (other than information concerning any Patent Rights or other intellectual property rights of any Third Party) that is related to the Core Technology, DNA-Binding Molecules that are or include Zinc Finger Proteins or the Collaboration Compositions of Matter existing on the Execution Date and the Effective Date, and that is material to the subject matter of this Agreement, including true, complete and accurate copies of all material data related thereto and (2) true, complete and accurate copies of all such information that Biogen Idec has requested in writing in connection with its decision whether to enter into this Agreement; provided that if after the Effective Date, Biogen Idec notifies Sangamo that it is interested in amending a Research and Development Plan to research or develop a TALE Protein or CRISPR/Cas system that Specifically Binds a Gene Target, then at Biogen Idec's request, Sangamo shall disclose to Biogen Idec true, complete and accurate copies of all information in Sangamo's possession or Control (other than information concerning any Patent Rights or other intellectual property rights of any Third Party) that is related to DNA-Binding Molecules that are or include TALE Proteins or CRISPR/Cas systems, respectively, and that is material to the subject matter of this Agreement, including true, complete and accurate copies of all material data related thereto, and Sangamo's disclosure pursuant to the preceding clause shall (x) constitute a representation of Sangamo under this Agreement as of the date of such disclosure and (y) be deemed incorporated herein by reference and a part of this Agreement;

(B) all Genes or portions thereof recognized by Sangamo as candidates for modification for the purpose of treating or preventing sickle cell disease or beta thalassemia; and

(C) true, complete and accurate copies of the sequence of all DNA-Binding Molecules Controlled by Sangamo that, in Sangamo's reasonable opinion, Specifically Bind to any of the Gene Targets.

With respect to this Section 7.2(h)(i) only, Sangamo's knowledge shall mean the actual knowledge (each such Person having made reasonable internal inquiry of the Sangamo personnel who report to such Person) of [***] or, if any such Person's employment by Sangamo ends between the Execution Date and the Effective Date, any other Person who is appointed to fill such Person's position prior to the Effective Date.

No representation or warranty of Sangamo contained in this Agreement and no information made available to Biogen by Sangamo described in this Section 7.2(h)(i) contains any untrue statement of material fact or, omits to state a material fact necessary in order to make the statements contained therein not misleading in light of the circumstances under which they were made.

(ii) During the Term on a Calendar Quarter basis, Sangamo shall disclose and make available to Biogen Idec true, complete and accurate copies of:

(A) all Licensed Know-How not previously provided to Biogen Idec under this Section 7.2(h)(ii)(A) in order for Biogen Idec to practice the licenses granted under this Agreement;

(B) all Licensed Patents filed since the prior disclosure under this Section 7.2(h)(ii)(B); and

(C) all Program Data developed since the prior disclosure under this Section 7.2(h)(ii)(C).

(i) Equipment and Supplies. There are no supplies or equipment that cost [***] or more that are required for Sangamo to perform the activities assigned to it under the initial BT Development Plan or practice the Core Technology, except any such equipment and supplies (A) that Sangamo purchased, leased or otherwise acquired prior to the Execution Date or has access to during the Term and that is fully functional and available for Sangamo to use to fulfill its obligations under the Research and Development Plans or (B) that are included in the initial BT Development Plan and budget attached hereto as Exhibit A.

7.3 Disclaimer. EXCEPT AS OTHERWISE EXPRESSLY SET FORTH HEREIN, THE PARTIES MAKE NO REPRESENTATIONS AND EXTEND NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, AND PARTICULARLY THE PARTIES DISCLAIM ALL IMPLIED WARRANTIES OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

8 PAYMENTS

8.1 Upfront Payment. Within thirty (30) days after the Effective Date, Biogen Idec shall pay to Sangamo a non-creditable, non-refundable upfront payment of twenty million U.S. dollars ($20,000,000.00).

8.2 Ongoing Research and Development Payments.

(a) Biogen Idec shall make non-creditable, non-refundable quarterly payments to reimburse Sangamo as specified in this Section 8.2(a) for activities conducted by or on behalf of Sangamo under the Research and Development Plans. Sangamo shall provide to Biogen Idec an invoice within fifteen (15) business days after the end of each Calendar Quarter for (i) the [***] used during such Calendar Quarter for each Research and Development Program, until the aggregate FTEs for the applicable Research and Development Program reach the [***] for such Research and Development Program for the calendar year in which such Calendar Quarter occurs, provided that with respect to the BT Program, if the [***] in a given year of the [***] of the BT Research Term is less than or exceeds the [***] for the BT Program for such given year, where, in the case of an excess, Sangamo notified Biogen Idec in writing of such excess prior to incurring any such excess and Biogen Idec agreed in writing prior to Sangamo incurring any such excess that the mechanism in this Section 8.2(a) would apply to such excess (which agreement Biogen Idec shall not unreasonably withhold or delay), the [***] by which budgeted amount exceeds or is less than the actual amount shall be added to or subtracted from, respectively, the [***] for the BT Program for the year immediately following such given year; (ii) on a BT External Activity-by-BT External Activity basis, the actual external costs for a BT External Activity for such Calendar Quarter, up to the budgeted amount for such BT External Activity; and (iii) the actual external costs for the SCD Program for such Calendar Quarter; (in each case (ii) and (iii), to the extent such costs are not reimbursed by a Third Party), with sufficient detail reasonably acceptable to Biogen Idec, for the activities performed during such Calendar Quarter and external costs incurred by Sangamo during such Calendar Quarter. Except as set forth in clause (iii) of the preceding sentence, Biogen Idec shall have no obligation to pay Sangamo any amount that is more than the applicable annual budget under the SCD Development Plan or the overall budget under the BT Development Plan. Subject to any good faith disputes promptly brought to Sangamo's attention and for which Biogen Idec is diligently seeking resolution, Biogen Idec shall pay such invoices within [***] of receipt of the respective invoice. Upon completion of any BT External Activity, if the [***] Sangamo may invoice Biogen Idec for the amount [***]. For example, if [***]. With respect to external costs for the SCD Program, Sangamo shall promptly after becoming aware of any overrun against the applicable approved annual budget, communicate to Biogen Idec any such overrun.

(b) Biogen Idec acknowledges that the [***] includes anticipated funding of external costs incurred by Sangamo under the BT Program. To the extent that Sangamo [***] under the [***], then notwithstanding Section 2.7 to the contrary, Sangamo shall be [***] by Sangamo under the BT Development Plan that Sangamo anticipated to be paid under the [***] but that are [***] under the [***].

8.3 Milestone Payments. Biogen Idec will make the following non-refundable, non-creditable payments ("*Milestone Payments*") to Sangamo within [***] after the first occurrence of each of the following events by Sangamo or by Biogen Idec or its Affiliates or Sublicensees ("*Milestone Events*"); provided that any [***] not previously paid shall be reduced by [***] in the event of a Milestone Reduction Event; further provided that (x) if Biogen Idec pays Sangamo [***] for the Pivotal Clinical Trial SCD Milestone Payment because Biogen Idec did not conduct a Phase II Clinical Trial for the applicable Licensed Product, then [***] Phase II SCD Milestone Payment shall be due and (y) if Biogen Idec pays Sangamo [***] for the Pivotal Clinical Trial BT Milestone Payment because Biogen Idec did not conduct a Phase II Clinical Trial for the applicable Licensed Product, then [***] Phase II BT Milestone Payment shall be due. Each Milestone Payment for the specified patient population shall be made one time only, even if a Milestone Event is initially achieved with a Licensed Product created using one Collaboration Composition of Matter and subsequently achieved with a Licensed Product created using a different Collaboration Composition of Matter.

(a) Development Milestones.

		Milestone Payment (for the Specified Patient Population)		
Row	**Milestone Event**	**Sickle Cell Disease**	**Beta Thalassemia**	**Other**
1	[***]	$7.5 million		
2	[***]		$7.5 million	
3	[***]	[***]	[***]	
4	[***]	[***]	[***]	[***]
5	[***]	[***]	[***]	[***]
6	[***]	[***] [***]	[***]	[***]
7	[***]	[***]	[***]	[***]
8	[***]	[***]	[***]	[***]
9	[***] [***]	[***]	[***]	[***]
	[***]	[***] [***]	[***]	[***]
	[***]	[***] [***]	[***]	[***]
10	[***]	[***] [***]	[***]	[***]

*** CONFIDENTIAL PORTIONS OMITTED AND FILED SEPARATELY WITH THE COMMISSION

(i) Phase I Clinical Trial Optimization or Expansion to Phase II Clinical Trial. If the First in Human Trial or the first Phase I Clinical Trial of a Licensed Product from the SCD Program, as applicable, is subsequently optimized or expanded and thereby becomes a Phase II Clinical Trial because such trial meets the applicable Phase II Milestone Criteria, then Biogen Idec will pay the Milestone Payment for a Phase II Clinical Trial for such patient population within thirty (30) days after the first subject is dosed under the optimized or expanded protocol for such clinical trial, after having already paid the Phase I Clinical Trial Milestone Payment for such clinical trial.

(ii) Simultaneous Payment of Prior Milestone Payments and NDA/BLA/MAA Acceptance Milestone Payments. If a Pivotal Clinical Trial Milestone Payment, or any preceding Milestone Payment, has not been paid for a particular patient population by the time that the NDA, BLA, MAA or Japanese NDA acceptance Milestone Event is achieved for such patient population, then all unpaid earlier Milestone Payments for such patient population will be due on the due date for payment of the Milestone Payment for acceptance of the NDA, BLA, MAA or Japanese NDA for such patient population, whichever is first achieved, and will be paid in addition to such Milestone Payment.

(b) Sales Milestones.

Milestone Event	Milestone Payment
[***]	[***]
[***]	[***]

Such payments will be due within forty-five (45) days after the Calendar Quarter in which the Milestone Event occurs. If both such Milestone Events are achieved in the same year, both Milestone Payments shall be payable for such year.

*** CONFIDENTIAL PORTIONS OMITTED AND FILED SEPARATELY WITH THE COMMISSION

8.4 Earned Royalties.

(a) Earned Royalties. On a Licensed Product-by-Licensed Product basis, Biogen Idec shall pay Sangamo incremental royalties on Net Sales of Licensed Products calculated as the following percentages of the applicable portion of annual Net Sales of each Licensed Product (the "*Earned Royalties*").

Annual Net Sales of a Licensed Product	Royalty Rate
[***]	
[***]	
[***]	

For example, for annual Net Sales of a particular Licensed Product of $[***], the total Earned Royalty would be calculated as follows:

[***]

(i) No Valid Claim Reduction. On a country-by-country basis, Net Sales of a Licensed Product in a country shall be reduced by [***] at any time when there is no Valid Claim included in the Licensed Patents in such country that covers the manufacture, use or sale of such Licensed Product or any Collaboration Composition of Matter that is incorporated or used in the manufacture or processing of such Licensed Product, but only if at such time Section 8.4(a)(ii)[***].

(ii) Generic Product Reduction. Net Sales of a Licensed Product in a country shall be reduced by [***] if, following the first sale of a Generic Product with respect to such Licensed Product in such country, the Net Sales in such country of such Licensed Product in any Calendar Quarter are [***] of the average Net Sales of such Licensed Product in such country averaged over the [***] Calendar Quarters immediately prior to the first sale of such Generic Product in such country. If such reduction takes effect, it will apply for each Calendar Quarter thereafter in which the Net Sales of such Licensed Product in such country remain [***] of the average Net Sales of such Licensed Product in such country averaged over the [***] Calendar Quarters immediately prior to the first sale of such Generic Product in such country; provided that such reduction to Net Sales of such Licensed Product in such country shall become permanent beginning on the first Calendar Quarter after such reduction has been in effect for the immediately preceding [***] consecutive Calendar Quarters; further provided that the terms of this Section 8.4(a)(ii) shall not apply to reduce Net Sales of a Licensed Product in a country if such Net Sales have already been reduced pursuant to terms of Section 8.4(a)(i).

(iii) Third Party License Payments. Notwithstanding anything in this Agreement to the contrary, if any royalties are due by Sangamo to Third Parties under any Third Party License or under the [***] Agreement on account of Biogen Idec's or its Affiliates', Sublicensees' or distributors' sale of a Licensed Product in a country in which the royalty reductions in Sections 8.4(a)(i) and 8.4(a)(ii) apply, the amount paid by Biogen Idec after any such reductions shall not be less than the aggregate royalty amounts due under the Third Party Licenses and under the [***] Agreement on account of such Net Sales.

(iv) Third Party License Payment Reduction. Biogen Idec shall have the offset rights set forth in Section 8.6.

(b) Extended Royalty Term. Following expiration of the Royalty Term for any Licensed Product in any country, [***] to Sangamo with respect to Net Sales of such Licensed Product in such country and thereafter the licenses granted to Biogen Idec hereunder with respect to such Licensed Product in such country shall be [***], exclusive, irrevocable and [***]; provided, however, that if after the expiration of the Royalty Term for a Licensed Product in a country, any payments are due by Sangamo to Third Parties under the Third Party Licenses on account of Biogen Idec's or its Affiliates' or Sublicensees' development or sale of a Licensed Product in a country after the expiration of the Royalty Term for such Licensed Product in such country, Biogen Idec shall pay to Sangamo such amounts due to such Third Parties under any such Third Party License, and the sublicense with respect to the applicable Licensed Technology shall be [***], exclusive, irrevocable and [***] only after all such payment obligations expire. Schedule 8.4 identifies those Existing Third Party Licenses in which Sangamo's payment obligations may extend beyond the Royalty Term.

(c) CIRM Royalties. In addition to the Earned Royalties, Biogen Idec shall be solely responsible for, and shall pay when due, all payments payable to the State of California pursuant to California Code of Regulations Section 100608(b), as applicable to the CIRM Award, in connection with the CIRM Award, to the extent resulting from commercialization of Licensed Products by or on behalf of Biogen Idec or its Affiliates or Sublicensees; provided that in no event shall Biogen Idec be responsible to pay any amounts to the State of California or Sangamo pursuant to this Section 8.4(c) that are in excess (in the aggregate) of the amount that Biogen Idec would have been obligated to pay to the State of California pursuant to California Code of Regulations Section 100608(b) as in effect on the Execution Date. In the event that Sangamo fails to receive any amount of the anticipated funding under the CIRM Award, Biogen Idec shall pay to Sangamo, in addition to all other payments specified in Sections 8.3 and 8.4, all or the applicable portion of any payments that it would have been obligated to pay to the State of California had Sangamo received such amount; provided that in no event shall Biogen Idec be obligated to pay to Sangamo under this Section 8.4(c) any amount in excess (in the aggregate) of the amount that Biogen Idec would have been obligated to pay to the State of California pursuant to California Code of Regulations Section 100608(b) if Sangamo had received the full anticipated amount of the CIRM Award as in effect on the Execution Date. If, at any time after the Execution Date, Sangamo has the option to decide whether to apply Section 100608(b) of the California Code of Regulations as in effect on the Execution Date or a subsequently amended version of Section 100608(b) to the CIRM Award, Sangamo shall (i) notify Biogen Idec of such option within a reasonable amount of time in advance of notifying the State of California or CIRM of any such decision, (ii) permit Biogen Idec an opportunity to review and comment thereon and (iii) consider in good faith any reasonable comments made by Biogen Idec with regards to such decision; provided that notwithstanding the foregoing in this Section 8.4(c)

Biogen Idec shall be obligated to pay under this Section 8.4(c) all amounts in excess of the amount that Biogen Idec would have been obligated to pay to the State of California pursuant to California Code of Regulations Section 100608(b) as in effect on the Execution Date, if such excess results from a decision under this sentence and Biogen Idec agrees to such decision in writing in advance of Sangamo's election.

8.5 Payment of Earned Royalties. Earned Royalties shall become due and payable [***] following the end of the Calendar Quarter during which Net Sales first occur, and within [***] of the end of each Calendar Quarter thereafter, for sales during each such Calendar Quarter, provided that such sales are made prior to the end of the Royalty Term (or any extension thereof pursuant to Section 8.4(b)).

8.6 Payments for Third Party IP Rights.

(a) Existing Third Party Licenses. Sangamo shall be solely responsible for all payments under Existing Third Party Licenses, except as provided in Sections 6.1(c)(vii) and 8.4(b).

(b) Other Third Party Licenses or Licenses Obtained by Biogen Idec.

(i) *Third Party Core IP*. To the extent that Sangamo or Biogen Idec obtains a license to any Third Party Core IP in accordance with Section 9.4, Sangamo shall be solely responsible for all payments under such licenses resulting from the research, development and commercialization of Licensed Products, except as provided in Sections 6.1(c)(vii) and 8.4(b); provided, however, that if Biogen Idec obtained such license and Sangamo did not approve of the applicable license agreement in writing before Biogen Idec's execution thereof, and if Sangamo disputes pursuant to Section 15.2 that Biogen Idec failed to use good faith efforts to obtain commercially reasonable economic terms for such license agreement, then until the resolution of such dispute pursuant to Section 15.2, Sangamo shall only be obligated to reimburse Biogen Idec for payments under such license agreement that Sangamo determines that Biogen Idec would have obtained if Biogen Idec had used good faith efforts to obtain commercially reasonable economic terms, and shall pay the remaining portion of the amounts due under such license agreement into an escrow account established by the Parties for such purpose, with the costs of the escrow being borne equally by the Parties subject to reimbursement as provided below. Upon resolution of such dispute pursuant to Section 15.2, the amount in such escrow account finally determined under such dispute resolution to be the amount that would have been Biogen Idec's obligation to any such Third Party under such license agreement if Biogen had used good faith efforts to obtain commercially reasonable terms (plus interest thereon) shall be released to Biogen Idec, any remaining amounts in such escrow account (plus interest thereon) shall be released to Sangamo, and Sangamo shall thereafter be obligated to pay the amounts under such license agreement determined to be the amount that would have been Biogen Idec's obligation to any such Third Party under such license if Biogen Idec had used good faith efforts to obtain commercially reasonable terms. For the avoidance of doubt, if, pursuant to the dispute resolution provisions of Section 15.2, Biogen Idec is found to have used good faith efforts to obtain commercially reasonable terms for any license agreement described in this Section 8.6(b)(i), then Sangamo shall be obligated to reimburse Biogen Idec

pursuant to this Section 8.6(b)(i) for all amounts that Biogen Idec is obligated to pay to any such Third Party under any such license agreement. In the event that Biogen Idec is found to have used good faith efforts to obtain commercially reasonable terms as described in the immediately preceding sentence, then Sangamo shall reimburse Biogen Idec for its share of the costs of the escrow established pending the resolution of such dispute. In the event that Biogen Idec is found not to have used good faith efforts to obtain commercially reasonable terms as described above, then Biogen Idec shall reimburse Sangamo for its share of the costs of the escrow established pending the resolution of such dispute.

(ii) *Third Party Other IP.*

(A) To the extent that Biogen Idec obtains a Narrow License to any Third Party Other IP in accordance with Section 9.4, or a license to any Third Party IP Rights that are not Third Party Core IP, Third Party Other IP or Third Party Product-Specific IP, Biogen Idec shall be solely responsible for all payments under such licenses and shall be entitled to offset, against Earned Royalties and Milestone Payments for any Licensed Product in any Calendar Quarter, [***] of any payments that Biogen Idec makes to a Third Party for such Calendar Quarter in consideration for a license to intellectual property that Biogen Idec reasonably determines pursuant to Section 9.4 (x) is necessary to use, manufacture or commercialize such Licensed Product or (y) is useful and either (1) actually used (in the case of licensed Know-How) to use, manufacture or commercialize such Licensed Product or (2) claims (in the case of licensed Patent Rights) the use, manufacture of commercialization of such Licensed Product, in each case (x) and (y) subject to Section 8.6(c).

(B) To the extent that Sangamo obtains a Narrow License to any Third Party Other IP that is a Third Party License, Biogen Idec shall pay to Sangamo all amounts due under such Narrow License within forty-five (45) days after the applicable due date in such Third Party License. Biogen Idec shall be entitled to offset, against Earned Royalties and Milestone Payments for any Licensed Product in any Calendar Quarter, [***] of any payments that Biogen Idec makes to Sangamo for such Calendar Quarter under this Section 8.6(b)(ii)(B) with respect to such Licensed Product, subject to Section 8.6(c).

(iii) *Third Party Product-Specific IP*.

(A) To the extent that Biogen Idec obtains a license to any Third Party Product-Specific IP, Biogen Idec shall be solely responsible for all payments under such Third Party licenses, and shall be entitled to offset, against Earned Royalties and Milestone Payments for any Licensed Product in any Calendar Quarter, [***] of any payments that Biogen Idec makes under such Third Party licenses for such Licensed Product and Calendar Quarter, subject to Section 8.6(c).

(B) To the extent that Sangamo obtains a license to any Third Party Product-Specific IP that is a Third Party License, Biogen Idec shall be responsible for all payments under such Third Party Licenses and shall pay such amounts to Sangamo within forty-five (45) days after the applicable due date in such Third Party License, and Biogen Idec shall be entitled to offset, against Earned Royalties and Milestone Payments for any Licensed Product in any Calendar Quarter, [***] of any payments that Biogen Idec makes to Sangamo for such Calendar Quarter under this Section 8.6(b)(iii)(B) with respect to such Licensed Product, subject to Section 8.6(c).

(iv) *Direct License*. If any Third Party License is terminated and as a result, Biogen Idec becomes a direct licensee of such Third Party licensor, Biogen Idec shall have the right to offset, against Earned Royalties and Milestone Payments for any Licensed Product in any Calendar Quarter, [***] of (1) any past due amounts and any penalties and interest thereon under Sangamo's license that Biogen Idec must pay and does pay to such Third Party licensor when Sangamo's license terminates in order for Biogen Idec to receive a direct license and (2) any payments that Biogen Idec makes to such Third Party licensor with respect to such Licensed Product and Calendar Quarter that had been previously required to be paid by Sangamo hereunder.

(c) Payment Offset Floor. The aggregate amount of all offsets under this Section 8.6 shall not reduce any payment due to Sangamo for a particular Licensed Product (1) by more than [***] of the amount that would otherwise be owed to Sangamo under Section 8.3 or 8.4(a), as applicable, without taking into account any offset (other than the reductions under Sections [***]), provided that this clause (1) of Section 8.6(c) shall not apply to any offsets that Biogen Idec is entitled to under Sections [***] and [***] and (2) (i) if such payment is a Milestone Payment, to an amount that is less than the aggregate amounts due under all Third Party Licenses (excluding those amounts paid by Biogen Idec to Sangamo pursuant to this Section 8.6 in accordance with Section 9.4(b)) on account of the event giving rise to such Milestone Payment and (ii) if such payment is an Earned Royalty, to an amount that is less than the aggregate amounts due under all Third Party Licenses (excluding those amounts paid by Biogen Idec to Sangamo pursuant to Section 8.6 in accordance with Section 9.4(b)) and the [***] Agreement on account of the Net Sales giving rise to such Earned Royalties. For any payments that Biogen Idec makes to any such Third Party licensor with respect to a Licensed Product, Biogen Idec shall have the right to carry forward as offsets against future Milestone Payments and Earned Royalties to Sangamo with respect to such Licensed Product any portion of the [***] of such payments that Biogen Idec has not yet applied or would have been entitled to offset but for the foregoing decrease of offsets.

8.7 Royalty Reports.

(a) Within [***] after the end of each Calendar Quarter during the Royalty Term, Biogen Idec shall furnish to Sangamo a written report showing in reasonably specific detail, on a Licensed Product-by-Licensed Product and country-by-country basis: (i) the Gross Sales of all Licensed Product sold by Biogen Idec and its Affiliates and Sublicensees during such Calendar Quarter, (ii) the calculation of Net Sales from Gross Sales of Licensed Product, (iii) the withholding taxes, if any, required by law to be deducted with respect to royalties due on such sales and (iv) the exchange rates, if any, used in determining the amount payable to Sangamo in United States dollars.

(b) With respect to sales of Licensed Product invoiced in United States dollars, all such amounts shall be expressed in United States dollars. With respect to sales of Licensed Product invoiced in a currency other than United States dollars, all such amounts shall be expressed both in the currency in which the amount is invoiced and in the United States dollar equivalent. Whenever for the purpose of calculating Net Sales, conversion from any foreign currency shall be required, all amounts will first be calculated in the currency of sale and then converted into United States dollars by applying the monthly average rate of exchange calculated by using the foreign exchange rates published in Bloomberg during the applicable month starting two (2) business days before the beginning of such month and ending two (2) business days before the end of such month as utilized by Biogen Idec, in accordance with U.S. GAAP, fairly applied and as employed on a consistent basis throughout Biogen Idec's operations.

(c) Biogen Idec shall keep complete and accurate records in sufficient detail to enable the royalties and Milestone Payments based on Net Sales payable under this Article 8 to be determined.

8.8 Sangamo Audit Rights.

(a) Upon fourteen (14) days advance written notice by Sangamo and not more than once in each calendar year (except for cause), Biogen Idec, its Sublicensees and their Affiliates shall permit an independent certified public accounting firm of internationally recognized standing, selected by Sangamo and reasonably acceptable to Biogen Idec, to have access during normal business hours to such of the records of Biogen Idec and its Affiliates and Sublicensees as may be reasonably necessary to verify the accuracy of the royalty reports and Milestone Payments based on Net Sales hereunder for any year ending not more than thirty-six (36) months prior to the date of such request. No year may be audited more than once, except for cause. The accounting firm will enter a confidentiality agreement reasonably acceptable to Biogen Idec governing the use and disclosure of Biogen Idec's information disclosed to such firm, and such firm shall disclose to Sangamo only whether the reports are correct or not and the specific details concerning any discrepancies, which information shall be Confidential Information of Biogen Idec.

(b) Unless disputed by Biogen Idec or Sangamo in good faith, if such accounting firm concludes that the royalties or Milestone Payments based on Net Sales paid during the audited period were more or less than the royalties and Milestone Payments based on

Net Sales due, Biogen Idec shall pay any additional amounts due, and Sangamo will refund any amounts overpaid, in each case plus interest as set forth in Section 8.11, within [***] after the date the written report of the accounting firm so concluding is delivered to Sangamo and Biogen Idec. The written report will be binding on the Parties absent clear error. The fees charged by such accounting firm shall be paid by Sangamo; provided, that if the audit discloses that the royalties and Milestone Payments payable by Biogen Idec for the applicable period have been underpaid by more than [***] then Biogen Idec shall pay the reasonable fees and expenses charged by such accounting firm. Sangamo shall treat all financial information disclosed by its accounting firm pursuant to this Section 8.8 as Confidential Information of Biogen Idec for purposes of Article 10 of this Agreement, and shall cause its accounting firm to do the same.

(c) In the event of a good faith dispute by Biogen Idec or Sangamo regarding the result of an audit made pursuant to this Section 8.8, the Parties shall agree in good faith on an alternative independent certified public accounting firm of internationally recognized standing to perform a second audit. If such audit is requested by Biogen Idec because Biogen Idec was found by the initial audit to have underpaid and the second audit confirms that Biogen Idec underpaid, then Biogen Idec shall bear all costs associated with the second audit. If such audit is requested by Sangamo because Biogen Idec was found by the initial audit to have overpaid and the second audit confirms that Biogen Idec overpaid, then Sangamo shall bear all costs associated with the second audit. Notwithstanding the above, in the event that the second audit confirms the findings of the first audit, the requesting Party shall pay. No over or under payment indicated by the initial audit shall be payable in the event of a dispute until the second audit is complete and such second audit shall be binding on the Parties, with any under or over payment determined thereby, plus interest as set forth in Section 8.11, being payable within forty-five (45) days after the date the written report of the accounting firm so concluding is delivered to Sangamo and Biogen Idec.

8.9 Withholding Taxes

(a) Sangamo shall provide all timely and accurate information and documentation to Biogen Idec to enable Biogen Idec to determine if any withholding taxes apply to any payments. Biogen Idec shall make such withholding payments as required and subtract such withholding payments from the payments due to Sangamo. Biogen Idec shall submit appropriate proof of payment of the withholding taxes to Sangamo within a reasonable period of time. At the request of Sangamo, Biogen Idec shall give Sangamo such reasonable assistance, which shall include the provision of appropriate certificates of such deductions made together with other supporting documentation as may be required by the relevant tax authority, to enable Sangamo to claim exemption from such withholding or other tax imposed or obtain a repayment thereof or reduction thereof and shall upon request provide such additional documentation from time to time as is reasonably required to confirm the payment of tax.

(b) Notwithstanding Section 8.9(a), if Biogen Idec is required to make a payment to Sangamo that is subject to a deduction or withholding of tax, then if such withholding or deduction obligation arises as a result of an assignment or sublicense by Biogen Idec, that has the effect of increasing the withholding tax of Sangamo relative to what would be due under the existing tax status of Sangamo as a qualified US resident for US Income Tax Treaty purposes and as the sole beneficial owner of the license and rights under this agreement (a "*Biogen Idec Withholding Tax Action*"), then the sum payable by Biogen Idec (in respect of which such deduction or withholding is required to be made) shall be increased to the extent necessary to ensure that Sangamo receives a sum equal to the sum which it would have received had no such Biogen Idec Withholding Tax Action occurred, but only to the extent that such increased withholding exceeds the amount that Sangamo claims any federal, state and foreign tax benefit for under U.S. GAAP and the tax years available for such benefit on Sangamo's tax returned has expired and are closed for income tax audit. Any transfer, assignment or license of the rights under this agreement by Sangamo to a beneficial owner that is not a valid US resident for US income tax purposes shall relieve Biogen Idec of any and all requirements to gross up payments for withholding taxes.

8.10 Payment Method. All payments by Biogen Idec to Sangamo hereunder shall be in United States dollars in immediately available funds and shall be made by wire transfer to a bank account designated in writing by Sangamo to Biogen Idec.

8.11 Late Payments. If a Party does not receive payment of any sum due to it on or before the due date therefor, simple interest shall thereafter accrue on the sum due to the Party from the due date until the date of payment at a per-annum rate of [***] over the then-current prime rate reported in *The Wall Street Journal* or the maximum rate allowable by applicable laws, whichever is lower.

9 INTELLECTUAL PROPERTY

9.1 Ownership and Classification

(a) Inventions. Each Party, as between such Party and the other Party, shall own all Know-How conceived, discovered, invented, created, made or reduced to practice or tangible medium solely by employees, agents or contractors of such Party (and all Patent Rights claiming such Know-How), and the Parties shall jointly own and have an undivided one-half interest in and to all Joint Know-How and Joint Patents. All determinations of inventorship under this Agreement shall be made in accordance with the patent law of the United States. Each Party may exploit any Joint Technology without accounting to or obtaining consent from the other Party, subject to the exclusive license of Sangamo's interest thereunder granted, as part of the Licensed Technology, under Section 6.1(a), provided, however, that nothing in this Section 9.1(a) shall be construed as a grant to any other intellectual property held by the other Party.

(b) Program Data. Sangamo, on behalf of itself and its Affiliates, hereby agrees to and does hereby [***] to Biogen Idec all of Sangamo's and its Affiliates' right, title and interest in and to the Program Data. Sangamo will, and will cause its Affiliates to, execute and deliver all requested [***] and other documents, and take such other actions as Biogen Idec may reasonably request, in order to perfect and enforce Biogen Idec's rights in the Program Data. Neither Sangamo, its Affiliates nor any Third Party may publish, use, access or cross reference any Program Data without prior written consent from Biogen Idec, such consent not to be unreasonably withheld. Notwithstanding the foregoing, until a specific portion of Program Data enters the public domain through no fault or omission of Biogen Idec, the terms of Section 10.1 and the first sentence of Section 10.3 shall apply to such portion of Program Data as if such portion were Confidential Information of Sangamo; provided that the foregoing shall not apply to Program Data generated in a clinical trial. If Biogen Idec desires to publish or otherwise publicly disclose any Program Data, other than Program Data generated in a clinical trial, which Biogen Idec may publish or publicly disclose in accordance with Section 10.4, Biogen Idec shall notify Sangamo, identifying the applicable Program Data. Within [***] after each such request, Sangamo shall notify Biogen Idec of its election to (i) allow public disclosure of such Program Data, (ii) maintain such Program Data as proprietary Know-How, in which case Biogen Idec shall not publish or publicly disclose such Program Data without Sangamo's prior written approval, or (iii) file a patent application disclosing such Program Data, in which case Biogen Idec shall not publish or publicly disclose such portion unless and until (1) Sangamo notifies Biogen Idec that it has filed a patent application disclosing such Program Data or (2) [***] after Sangamo's notification of its election to file a patent application, whichever is earlier. For clarity, the foregoing obligation shall apply to each portion of Program Data that Biogen Idec desires to publish or publicly disclose. Biogen Idec shall not be required to follow the procedures under this Section 9.1(b) before publishing or publicly disclosing any Program Data that has already been publicly disclosed by Biogen Idec in accordance with this Section 9.1(b).

(c) Personnel Obligations. Each employee, agent or independent contractor of a Party or its respective Affiliates performing work under this Agreement shall, prior to commencing such work, be bound by invention and data assignment obligations, including: (i) promptly reporting any invention, discovery, process or other intellectual property right; (ii) presently assigning to the applicable Party or Affiliate all of his or her right, title and interest in and to any invention, discovery, process or other intellectual property; (iii) cooperating in the preparation, filing, prosecution, maintenance and enforcement of any patent and patent application; and (iv) performing all acts and signing, executing, acknowledging and delivering any and all documents required for effecting the obligations and purposes of this Agreement. It is understood and agreed that such invention assignment agreement need not reference or be specific to this Agreement.

(d) Classification of Certain IP.

(i) For the purposes of this Agreement, in the event that any issued patent or patent application included in the Patent Rights includes:

(A) at least one claim that is [***] and at least one claim that is [***], but no claims that are [***], such patent or patent application shall be deemed to be [***] and not [***];

(B) at least one claim that is [***] and at least one claim that is [***], but no claims that are [***], such patent or patent application shall be deemed to be [***] and not [***], except as set forth in the fourth sentence of Section 9.2(b)(iii)(B) ;

(C) at least one claim that is [***] and at least one claim that is [***], but no claims that are [***], such patent or patent application shall be deemed to be [***] and not [***], except as set forth in the fourth sentence of Section 9.2(b)(iii)(B);

(D) at least one claim that is [***], at least one claim that is [***] and at least one claim that is [***], such patent or patent application shall be deemed to be [***] and not [***] or [***], except as set forth in the fourth sentence of Section 9.2(b)(iii)(B).

(ii) For the purposes of this Agreement, in the event that any issued patent or patent application included in the Patent Rights includes:

(A) at least one claim that is [***] and at least one claim that is [***], but no claims that are [***], such patent or patent application shall be deemed to be [***] and not [***];

(B) at least one claim that is [***] and at least one claim that is [***], but no claims that are [***], such patent or patent application shall be deemed to be [***] and not [***];

(C) at least one claim that is [***] and at least one claim that is [***], but no claims that are [***], such patent or patent application shall be deemed to be [***] and not [***], and shall also be deemed [***] for purposes of Section 9.2(b)(i);

(D) at least one claim that is [***], at least one claim that is [***] and at least one claim that is [***], such patent or patent application shall be deemed to be [***] and not [***] or [***].

For the avoidance of doubt, each claim of an issued parent or patent application may only be determined to meet the criteria of the definition of one of [***] for the purposes of Section 9.1(d)(i) (or [***] for the purposes of Section 9.1(d)(ii)) and, in making such determination, [***] with respect to the categorization of whether it is [***] as applicable).

(iii) For the purposes of this Agreement, in the event that any patent application included in the Patent Rights does not include any claims (*e.g.*, a United States provisional patent application), then such patent application shall [***], unless such patent application is listed on Schedule 1.129 as of the Execution Date.

(e) Determination of Licensed Patents for Purposes of Section 9.2(b). Solely for determining whether any Patent Right is a Licensed Patent by virtue of being [***] as such terms are used in Section 1.89(b), for purposes of applying the provisions of Section 9.2(b), Sangamo may determine in good faith whether such Patent Right is a Licensed Patent as a result of being [***] to Research, develop, manufacture, commercialize, market, import, export, sell or offer for sale Licensed Products in the Field. For the avoidance of doubt, no such determination by Sangamo pursuant to this Section 9.1(e) shall affect the scope of Licensed Patents licensed to Biogen Idec hereunder, but shall only be used by Sangamo to determine whether or not the preparation, filing, prosecution and maintenance of a particular Patent Right is governed by Section 9.2(b).

9.2 Preparation, Filing, Prosecution and Maintenance of Patents.

(a) No later than thirty (30) days after the Effective Date, each Party shall elect a representative to handle all patent affairs on behalf of such Party (such representative, the "*Patent Affairs Representative*")

(b) Licensed Patents and Certain Joint Patents

(i) Core IP.

(A) Sangamo, at its own expense, shall have the sole right to prepare, file, prosecute and maintain, throughout the world, those Licensed Patents and Joint Patents that are Core IP, subject to Section 9.2(b)(i)(B). Sangamo shall keep Biogen Idec informed as to material developments with respect to the filing, prosecution and maintenance of such Patent Rights, including providing advanced notice of its intent to abandon any such Patent Rights. Promptly after the Effective Date and on a semiannual basis thereafter (with respect to Patent Rights that come into the Control of Sangamo or any of its Affiliates during the Term), the Parties shall determine in good faith and mutually agree on a representative selection of those

Licensed Patents and Joint Patents that are Core IP in particular countries that are relevant to the Licensed Products (the "*Selected Core IP*"). At each such semiannual meeting in which the Parties determine the Selected Core IP, Sangamo shall provide a high level update regarding the Core IP. The Selected Core IP may be updated more often than semiannually by mutual agreement of the Patent Affairs Representatives. With respect to any Core IP that is not yet filed and that is Selected Core IP, Sangamo shall consult with Biogen Idec as to all patent filing strategies and shall provide Biogen Idec with drafts of any patent applications for such Selected Core IP reasonably in advance of filing, to the extent practicable, and shall consider Biogen Idec's comments thereto in good faith, to the extent received sufficiently in advance of the intended filing date. Sangamo shall keep Biogen Idec informed as to developments with respect to the filing, prosecution and maintenance (including any reissues, reexaminations, appeals to appropriate patent offices and/or courts, interferences, derivation proceedings, post-grant review proceedings or oppositions) of the Selected Core IP, and shall furnish Biogen Idec with copies of all material communications received from any patent office with respect to filing, prosecution and maintenance of the Selected Core IP. Sangamo shall provide Biogen Idec drafts of submissions relating thereto, including drafts of any material filings or responses to be made to relevant patent offices, within a reasonable amount of time in advance of submitting such filings or responses to permit Biogen Idec an opportunity to review and comment thereon. In addition, to the extent such filing, prosecution and maintenance of the Selected Core IP may affect the Product-Specific IP as reasonably determined by the Patent Affairs Representatives ([***]), Sangamo shall consult with Biogen Idec regarding strategy related to the filing, prosecution and maintenance of the Selected Core IP. Sangamo shall consider in good faith, take into account and implement where possible the reasonable comments made by Biogen Idec with respect to such Patent Rights, provided that Sangamo does not reasonably determine such comments to be detrimental to the prosecution or enforcement of any Patent Rights owned or controlled by Sangamo. Sangamo shall not take any action with respect to the prosecution of those Licensed Patents and Joint Patents that are Core IP (including Selected Core IP) that would disproportionately reduce the scope of coverage for Licensed Products while benefiting its other products. Biogen Idec or its external intellectual property counsel shall have the right, but not the obligation, to be present as a non-participating observer at all scheduled patent office proceedings that relate to the Selected Core IP, to the extent permitted under applicable laws.

(B) If Sangamo elects to cease the prosecution and maintenance of any Selected Core IP in any country, jurisdiction or as a PCT application (and does not elect to file one or more new patent applications covering the subject matter claimed in such Patent Rights), Sangamo will promptly provide Biogen Idec with written notice, but not less than thirty (30) days before any action is required, and will permit Biogen Idec, at Biogen Idec's sole discretion and expense, to continue prosecution or maintenance of any such Patent Rights. Upon request from Biogen Idec, Sangamo will execute such documents and perform such acts as may be reasonably necessary to permit Biogen Idec to continue such prosecution or maintenance, as applicable. Biogen Idec shall keep Sangamo informed as to developments with respect to the filing, prosecution and maintenance of such Patent Rights, including by providing copies of all office actions or any other substantive documents received from any patent office, including notice of all interferences, reissues, re-examinations or oppositions. Biogen Idec shall provide drafts of submissions relating thereto, including drafts of any material filings or responses to be made to such patent offices, within a reasonable amount of time in advance of submitting such

made to such patent offices, within a reasonable amount of time in advance of submitting such filings or responses to permit Sangamo an opportunity to review and comment thereon. Biogen Idec shall not make any statement or take any action in connection with its prosecution of such Selected Core IP that Sangamo reasonably determines to be detrimental to the prosecution or enforcement of any Patent Rights owned or controlled by Sangamo. In addition, with respect to all other reasonable comments made by Sangamo with respect to the prosecution of such Patent Rights, Biogen Idec shall consider in good faith, take into account and implement where possible such comments.

(ii) Other IP.

(A) Sangamo shall have the first right to prepare, file, prosecute and maintain, throughout the world those Licensed Patents and Joint Patents that are Other IP. Sangamo shall be solely responsible for all costs and expenses incurred in connection with the prosecution and maintenance of such Patent Rights in each jurisdiction listed on Schedule 9.2(b)(ii) (the "*Core Jurisdictions*"). If Biogen Idec desires that Sangamo file, prosecute and maintain any such Patent Rights that are Other IP in any jurisdictions other than the Core Jurisdictions, Biogen Idec shall notify Sangamo, and provided that such notice is timely received by Sangamo, Sangamo shall file, prosecute and maintain such Patent Rights in such jurisdictions, and Biogen Idec shall be solely responsible for all costs and expenses incurred by Sangamo in connection with the prosecution and maintenance of such Patent Rights in such jurisdictions. Sangamo shall keep Biogen Idec informed as to developments with respect to the filing, prosecution and maintenance (including any reissues, reexaminations, appeals to appropriate patent offices and/or courts, interferences, derivation proceedings, post-grant review proceedings or oppositions) of such Other IP and shall furnish Biogen Idec with copies of all material communications received from any patent office with respect to filing, prosecution and maintenance of the Other IP. Sangamo shall provide Biogen Idec drafts of submissions relating thereto, including drafts of any material filings or responses to be made to relevant patent offices, within a reasonable amount of time in advance of submitting such filings or responses to permit Biogen Idec an opportunity to review and comment thereon. In addition, to the extent such filing, prosecution and maintenance of any Other IP may affect the Product-Specific IP as reasonably determined by the Patent Affairs Representatives ([***]), Sangamo shall consult with Biogen Idec regarding strategy related to the filing, prosecution and maintenance of such Other IP. Sangamo shall consider in good faith, take into account and implement where possible the reasonable comments made by Biogen Idec with respect to such Patent Rights, provided that Sangamo does not reasonably determine such comments to be detrimental to the prosecution or enforcement of any Licensed Patents or other Patent Rights owned or controlled by Sangamo. Sangamo shall not take any action with respect to the prosecution of Other IP that would disproportionately reduce the scope of coverage for Licensed Products while benefiting its other products. Biogen Idec or its external intellectual property counsel shall have the right, but not the obligation, to be present as a non-participating observer at all scheduled patent office proceedings that relate to Other IP, to the extent permitted under applicable laws.

(B) If Sangamo elects not to file or elects to cease the prosecution and maintenance of any of those Licensed Patents or Joint Patents that are Other IP in any country, jurisdiction or as a PCT application (and does not elect to file one or more new patent applications covering the subject matter claimed in such Patent Rights), Sangamo will promptly provide Biogen Idec with written notice, but not less than thirty (30) days before any action is required, and will permit Biogen Idec, at Biogen Idec's sole discretion and expense, to continue prosecution or maintenance of any such Patent Rights. Upon request from Biogen Idec, Sangamo will execute such documents and perform such acts as may be reasonably necessary to permit Biogen Idec to continue such prosecution or maintenance, as applicable. Biogen Idec shall keep Sangamo informed as to developments with respect to the filing, prosecution and maintenance of such Patent Rights, including by providing copies of all office actions or any other substantive documents received from any patent office, including notice of all interferences, reissues, re-examinations or oppositions. Biogen Idec shall provide drafts of submissions relating thereto, including drafts of any material filings or responses to be made to such patent offices, within a reasonable amount of time in advance of submitting such filings or responses to permit Sangamo an opportunity to review and comment thereon. Biogen Idec shall consider in good faith, take into account and implement where possible the reasonable comments made by Sangamo with respect to such Patent Rights, provided that Biogen Idec does not reasonably determine such comments to be detrimental to the prosecution or enforcement of any Licensed Patents or other Patent Rights owned or controlled by Biogen Idec that claim Know-How made under this Agreement.

(iii) Product-Specific IP.

(A) Biogen Idec, at its own expense, shall have the first right to prepare, file, prosecute and maintain, throughout the world, Licensed Patents that are Product-Specific IP (which, for clarity, includes all Joint Patents that are Product-Specific IP), subject to the remainder of this Section 9.2(b)(iii).

(B) With respect to any Licensed Patent that is Core IP or Other IP whose specification would support Product-Specific IP ("*Genus Patent*"), the Parties intend that such Product-Specific IP and such Genus Patent will have the same specification and priority date. Sangamo shall have the sole right to prepare, and shall be responsible for preparing, the specification for each Product-Specific IP and corresponding Genus Patent, and shall give Biogen Idec ample opportunity to review the specification and provide comments thereon within a reasonable amount of time in advance of filing the specification with a patent office, to the extent practicable. Subsequent to such review and comment period, the Parties will file such Product-Specific IP and corresponding Genus Patent on the same day. Alternatively, and only in the event there is mutual agreement between Biogen Idec and Sangamo (which agreement shall not be unreasonably withheld or delayed), Sangamo may file the Genus Patent (which may in the United States be a provisional patent application) and subsequently file Product-Specific IP claiming priority therefrom (the "*Corresponding Product-Specific IP*"), which Corresponding Product-Specific IP Biogen Idec shall then have the first right to prosecute and maintain in accordance with this Section 9.2(b)(iii); provided that if Sangamo fails to file such Corresponding Product-Specific IP within [***] after Sangamo is first able to do so under applicable laws, then such Genus Patent will be deemed Product-Specific IP, which Biogen shall have the right to prosecute and maintain in accordance with this Section 9.2(b)(iii), provided that

Biogen Idec shall file such Corresponding Product-Specific IP as soon as reasonably practicable, upon which filing the Genus Patent will again be deemed Core IP or Other IP, as applicable. Sangamo shall consider in good faith, take into account and implement where possible the reasonable comments made by Biogen Idec with respect to such specification, provided that Sangamo does not reasonably determine such comments to be detrimental to the prosecution or enforcement of any Licensed Patents or other Patent Rights owned or controlled by Sangamo. Subject to Section 9.2(b)(iii)(C), Biogen Idec shall have the sole right to prepare the claims of Licensed Patents that are Product-Specific IP; provided that if Biogen Idec files one or more claims that cover (1) any product or service that is not a Licensed Product, (2) any composition that is not a Collaboration Composition of Matter or (3) the manufacture or use of the product, service or composition of clause (1) or (2) of this proviso, then the applicable Patent Right will no longer be Product-Specific IP, and Biogen Idec shall execute such documents and perform such acts as may be reasonably necessary to permit Sangamo to assume prosecution of the applicable Patent Right, unless Biogen Idec filed such claims in good faith without realizing that their scope exceeded the permissable scope of claims in Product-Specific IP, in which case Biogen Idec may alternatively cancel or amend such claims, promptly after becoming aware of such error, so that the applicable Patent Right reverts to Product-Specific IP.

(C) Biogen Idec shall keep Sangamo informed as to developments with respect to the filing, prosecution and maintenance of the Licensed Patents that are Product-Specific IP, including by providing copies of all office actions or any other substantive documents received from any patent office, including notice of all interferences, reissues, re-examinations or oppositions. Biogen Idec shall provide drafts of submissions relating thereto, including drafts of any material filings or responses to be made to such patent offices, within a reasonable amount of time in advance of submitting such filings or responses to permit Sangamo an opportunity to review and comment thereon. Biogen Idec shall consider in good faith, take into account and implement where possible the reasonable comments made by Sangamo with respect to such Patent Rights, provided that Biogen Idec does not reasonably determine such comments to be detrimental to the prosecution or enforcement of any Licensed Patents or other Patent Rights owned or controlled by Biogen Idec that claim Know-How made under this Agreement.

(D) If Biogen Idec elects not to file or elects to cease the prosecution and maintenance of any Product-Specific IP included in the Licensed Patents in any country, jurisdiction or as a PCT application (and does not elect to file one or more new patent applications covering the subject matter claimed in such Product-Specific IP), Biogen Idec will promptly provide Sangamo with written notice, but not less than thirty (30) days before any action is required, and will permit Sangamo, at Sangamo's sole discretion and expense, to continue prosecution or maintenance of any such Product-Specific IP. Upon request from Sangamo, Biogen Idec will execute such documents and perform such acts as may be reasonably necessary to permit Sangamo to continue such prosecution or maintenance, as applicable.

(E) With respect to any Licensed Patents that are Third Party IP Rights and that are deemed Third Party Core IP or Third Party Other IP pursuant to Sections 9.1(d)(ii)(B), (C) or (D), if Sangamo has the right to prosecute such Third Party IP Rights that

are patent applications under the applicable Third Party License, then Sangamo shall, as soon as practicable, file a patent application that is Third Party Product-Specific IP claiming priority from such Third Party Core IP or Third Party Other IP, and Biogen Idec shall thereafter have the first right to prosecute and maintain such Third Party Product-Specific IP in accordance with this Section 9.2(b)(iii).

(c) Biogen Idec Patents. Biogen Idec, at its own expense, shall have the sole right, but not the obligation, to prepare, file, prosecute and maintain, throughout the world, any Biogen Idec Patents and any Patent Rights owned solely by Biogen Idec that claim Know-How made under this Agreement. With respect to any such Patent Rights that are Core IP, Other IP or Product-Specific IP, Biogen Idec shall keep Sangamo informed as to developments with respect to the filing, prosecution and maintenance of such Patent Rights, including by providing copies of all office actions or any other substantive documents received from any patent office, including notice of all interferences, reissues, re-examinations, oppositions or requests for patent term extensions. Biogen Idec shall provide drafts of submissions relating thereto, including drafts of any material filings or responses to be made to such patent offices, within a reasonable amount of time in advance of submitting such filings or responses to permit Sangamo an opportunity to review and comment thereon. Biogen Idec shall consider in good faith, take into account and implement where possible the reasonable comments made by Sangamo with respect to such Patent Rights, to the extent intended to prevent any detrimental effect on the prosecution and maintenance of any Licensed Patents or other Patent Rights owned or controlled by Sangamo, provided that Biogen Idec does not reasonably determine such comments to be detrimental to the prosecution or enforcement of any Licensed Patents or other Patent Rights owned or controlled by Biogen Idec that claim Know-How made under this Agreement.

(d) Joint Patents that are not Core IP, Other IP or Product-Specific IP.

(i) Procedure. If the Parties make any Joint Know-How, the Patent Affairs Representatives shall promptly meet to discuss and determine whether to seek Joint Patents thereon and whether such Joint Patents would be Core IP, Other IP or Product-Specific IP, in which case Section 9.2(b) will apply to such Joint Patents. If either Party decides to seek any Joint Patents that would not be Core IP, Other IP or Product-Specific IP, then [***], but not the obligation, to prepare, file, prosecute and maintain throughout the world, any such Joint Patents, using patent counsel or patent agent selected by [***] and reasonably acceptable to [***]. If [***] elects not to exercise such right, then [***] shall have the right, but not the obligation, to prepare, file, prosecute and maintain throughout the world, such Joint Patent, using patent counsel or patent agent selected by [***] and reasonably acceptable to [***]. The prosecuting Party shall keep the non-prosecuting party informed as to developments with respect to the filing, prosecution and maintenance of such Joint Patents, including by providing copies of all material communications (including office actions and notices of interferences, reissues, re-examinations, oppositions, appeals to appropriate patent offices and/or courts, derivation proceedings or post grant review proceedings) from any patent office regarding such Joint Patents and shall provide the non-prosecuting party drafts of submissions relating thereto, including drafts of any material filings or responses to be made to such patent offices, within a reasonable amount of time in advance of submitting such filings or responses to permit the non-

prosecuting party an opportunity to review and comment thereon. The prosecuting party shall consider in good faith, take into account and implement where possible the reasonable comments made by the non-prosecuting party; provided that the prosecuting party does not reasonably determine such comments to be detrimental to the prosecution or enforcement of any Patent Rights owned or controlled by such Party. Except as provided in Section 9.2(d)(ii), the Parties shall share equally all costs and expenses incurred in connection with the prosecution and maintenance of such Joint Patents under this Section 9.2(d)(i). The non-prosecuting party shall have the right, but not the obligation, to be present at all patent office proceedings that relate to the Joint Patents under this Section 9.2(d)(i).

(ii) Abandonment. If the prosecuting Party elects to cease the prosecution and maintenance of any Joint Patent that is not Core IP, Other IP or Product-Specific IP in any country or as a PCT application (and does not elect to file one or more new patent applications covering the subject matter claimed in such Joint Patent), such Party will promptly provide the other Party with written notice, but not less than thirty (30) days before any action is required, and will permit the other Party, at its sole discretion and expense, to continue prosecution or maintenance of any such Joint Patent in such country. Upon request from the Party assuming prosecution, the other Party will execute such documents and perform such acts as may be reasonably necessary to permit the assuming Party to continue such prosecution or maintenance, as applicable. The assuming Party shall keep the other informed as to developments with respect to the filing, prosecution and maintenance of such Patent Rights, including by providing copies of all office actions or any other substantive documents received from any patent office, including notice of all interferences, reissues, re-examinations, oppositions, appeals to appropriate patent offices and/or courts, derivation proceedings or post-grant review proceedings. The assuming Party shall provide drafts of submissions relating thereto, including drafts of any material filings or responses to be made to such patent offices, within a reasonable amount of time in advance of submitting such filings or responses to permit the other Party an opportunity to review and comment thereon. The assuming Party shall consider in good faith, take into account and implement where possible the reasonable comments made by the other Party with respect to such Patent Rights, to the extent intended to prevent any detrimental effect on the prosecution and maintenance of any Licensed Patents or other Patent Rights owned or controlled by the other Party, provided that the assuming Party does not reasonably determine such comments to be detrimental to the prosecution or enforcement of any Licensed Patents or other Patent Rights owned by the assuming Party that claim Know-How made under this Agreement.

(e) Patent Term Extensions. In connection with the Marketing Approval of a Licensed Product, Biogen Idec shall consult with Sangamo before determining which patent, if any, is to be extended, by way, for example, of a Patent Term Restoration and a Supplementary Protection Certificate. Biogen Idec shall not have the right to extend in any country (i) any Core IP or Other IP or (ii) any other Joint Patent that is the subject of any such extension for a product other than a Licensed Product. Biogen Idec shall have the sole discretion to determine whether a Biogen Idec Patent or Product-Specific IP is to be extended. Sangamo shall cooperate with Biogen Idec to the extent reasonably requested by Biogen Idec to effectuate the intent of this Section 9.2(e).

(f) Orange Book Listing. In connection with the Marketing Approval of a Licensed Product, Biogen Idec shall have the sole right, in accordance with applicable laws andregulations, to choose whether a patent(s) is to be listed in the Orange Book or in any similar equivalent thereto in the Territory. Sangamo shall cooperate with Biogen Idec to the extent reasonably requested by Biogen Idec to effectuate the intent of this Section 1.1(a).

(g) Third Party Rights. For the avoidance of doubt, Biogen Idec's rights under this Section 9.2 to file, prosecute and maintain any Patent Rights licensed to Sangamo under a Third Party License may be exercised in Sangamo's name and for the benefit of Sangamo, provided that this Section 9.2 shall be subject to the terms of such Third Party License.

9.3 Enforcement of Patents.

(a) Notice. If either Biogen Idec or Sangamo becomes aware of any infringement, anywhere in the world, of any issued patent within the Licensed Patents, or Joint Patents that are not Licensed Patents, on account of a Third Party's manufacture, use or sale of a Licensed Product in the Field, including any "patent certification" filed in the United States under 21 U.S.C. §355(b)(2) or 21 U.S.C. §355(j)(2) or similar provisions in other jurisdictions naming a Licensed Product as a reference listed drug and of any declaratory judgment action by a Third Party that is developing or commercializing a Licensed Product in the Field alleging the invalidity, unenforceability or non-infringement of any of the foregoing Patent Rights (an "*Infringement*"), such Party will promptly notify the other Party in writing to that effect. In addition, each Party shall promptly notify the other Party upon becoming aware of any infringement of a Licensed Patent or declaratory judgment action with respect to a Licensed Patent that is not an Infringement.

(b) Product-Specific IP.

(i) In the case of any Infringement of a Licensed Patent that is Product-Specific IP (which, for clarity, includes any Joint Patent that is Product-Specific IP), Biogen Idec shall have the first right, but not the obligation, to take action, control and to obtain a discontinuance of the Infringement or bring suit against the applicable Third Party (such Third Party, the "*Third Party Infringer*") under the applicable Product-Specific IP, within six (6) months from the date of notice and to join Sangamo as a party plaintiff. Biogen Idec shall bear all the expenses of any suit brought by it claiming Infringement of any Product-Specific IP. Sangamo shall cooperate with Biogen Idec in any such suit as reasonably requested by Biogen Idec and at Biogen Idec's expense and shall have the right to consult with Biogen Idec and to participate in and, if appropriate, be represented by independent counsel in such litigation at its own expense. Biogen Idec shall not, without Sangamo's prior written consent, enter into any settlement or consent decree that requires any payment by or admits or imparts any other liability to Sangamo or admits the invalidity or unenforceability of any such Product-Specific IP, which consent shall not be unreasonably withheld. If Biogen Idec has not taken steps to obtain a discontinuance of Infringement of such Product-Specific IP or filed suit against any such Third Party Infringer of Product-Specific IP within six (6) months from the date of written notice of Infringement from Sangamo, then unless Biogen Idec notifies Sangamo within such six (6)-month period of a reasonable business justification for not bringing such suit and requests in

writing that Sangamo not file such suit, Sangamo shall have the right, but not the obligation, to bring suit against such Third Party Infringer, provided, that Sangamo shall bear all the expenses of such suit. Biogen Idec shall cooperate with Sangamo in any such suit for Infringement of Product-Specific IP brought by Sangamo against a Third Party (including joining as a party plaintiff) at Sangamo's request and expense, and shall have the right to consult with Sangamo and to participate in and be represented by independent counsel in such litigation at its own expense. Sangamo shall not, without Biogen Idec's prior written consent, which consent shall not be unreasonably withheld, enter into any settlement or consent decree that requires any payment by or admits or imparts any other liability to Biogen Idec or admits the invalidity or unenforceability of any Product-Specific IP, or adversely impacts Biogen Idec's ability to maximize Net Sales or impacts market share of Licensed Products. The enforcing Party under this Section 9.3(b) shall keep the other Party reasonably informed of all material developments in connection with any such suit.

(ii) Any recoveries obtained by either Party as a result of any proceeding against a Third Party Infringer under this Section 9.3(b) shall be allocated as follows:

(A) Such recovery shall first be used to reimburse the enforcing Party for all out-of-pocket litigation costs in connection with such litigation paid by that Party, and then to reimburse out-of-pocket litigation costs paid by the other Party;

(B) If Biogen Idec is the enforcing Party against an Infringement in the Field, with respect to any remaining portion of such recovery, Sangamo shall receive an amount equal to [***] of such amount, but not more than the amounts that would be payable, pursuant to Sections 8.3 and 8.4, if the recovery on infringing sales, after reimbursing the Parties under Section 9.3(b)(ii)(A), were treated as Net Sales of a Licensed Product, and Biogen Idec shall receive any remaining portion of such recovery; and

(C) If Sangamo is the enforcing Party against an Infringement in the Field, Sangamo shall receive [***] and Biogen Idec shall receive [***], of the remaining portion of such recovery.

(c) Core IP and Other IP.

(i) Sangamo shall have the first right, but not the obligation, to take action to obtain a discontinuance of the Infringement or bring suit against the applicable Third Party Infringer of any Licensed Patent or Joint Patent that is Core IP or Other IP, within six (6) months from the date of notice and to join Biogen Idec as a party plaintiff; provided, however, that if Biogen Idec notifies Sangamo within such six (6)-month period of a reasonable business justification for not bringing such suit to enforce any Licensed Patent or Joint Patent that is Other IP and requests in writing that Sangamo not file such suit, then unless Sangamo disagrees with Biogen Idec's reasonable business justification, Sangamo shall not take action against the Third Party Infringer. If Sangamo notifies Biogen Idec within thirty (30) days after Biogen Idec's request that it disagrees with Biogen Idec's reasonable business justification for not enforcing such Other IP, then the disputed matter will be submitted to the Chief Executive Officer of each Party (or his/her nominee) for good faith discussions, and if such individuals are not able to

resolve the matter within thirty (30) days of such submission, then notwithstanding the foregoing, Sangamo shall not have the right to enforce the applicable Other IP. For clarity, Biogen Idec shall not have the right under this Section 9.3(c)(i) to prevent Sangamo from enforcing any Core IP.

(ii) Sangamo shall bear all the expenses of any suit brought by it under this Section 9.3(c) claiming Infringement of any Core IP or Other IP, as applicable. Biogen Idec shall cooperate with Sangamo in any such suit as reasonably requested by Sangamo and at Sangamo's expense and shall have the right to consult with Sangamo and to participate in and, if appropriate, be represented by independent counsel in such litigation at its own expense. Sangamo shall not, without Biogen Idec's prior written consent, enter into any settlement or consent decree that requires any payment by or admits or imparts any other liability to Biogen Idec or admits the invalidity or unenforceability of any Core IP or Other IP, as applicable, which consent shall not be unreasonably withheld.

(iii) If Sangamo has not taken steps to obtain a discontinuance of infringement of Core IP or Other IP, as applicable, or filed suit against any such Third Party infringer of Core IP or Other IP, as applicable, within six (6) months from the date of notice of Infringement, then upon Sangamo's written consent (not to be unreasonably withheld), Biogen Idec shall have the right, but not the obligation, to bring suit under the applicable Licensed Patent or Joint Patent that is Core IP or Other IP against such Third Party Infringer, provided, that Biogen Idec shall bear all the expenses of such suit. Sangamo shall cooperate with Biogen Idec in any such suit for Infringement brought by Biogen Idec against a Third Party (including joining as a party plaintiff) at Biogen Idec's expense, and shall have the right to consult with Biogen Idec and to participate in and be represented by independent counsel in such litigation at its own expense. Biogen Idec shall not, without Sangamo's prior written consent, which consent shall not be unreasonably withheld, enter into any settlement or consent decree that requires any payment by or admits or imparts any other liability to Sangamo or admits the invalidity or unenforceability of any such Licensed Patent or Joint Patent that is Core IP or Other IP, as applicable. The enforcing Party under this Section 9.3(c) shall keep the other Party reasonably informed of all material developments in connection with any such suit.

(iv) Any recoveries obtained by either Party as a result of any proceeding against a Third Party Infringer under this Section 9.3(c) shall be allocated as follows:

(A) Such recovery shall first be used to reimburse the enforcing Party for all out-of-pocket litigation costs in connection with such litigation paid by that Party, and then to reimburse out-of-pocket litigation costs paid by the other Party;

(B) If Sangamo is the enforcing Party, Sangamo shall receive [***], and Biogen Idec shall receive [***], of the remaining portion of such recovery; and

(C) If Biogen Idec is the enforcing Party, with respect to any remaining portion of such recovery, Sangamo shall receive an amount equal to twenty-five percent [***] of such amount, but not more than the amounts that would be payable, pursuant to Sections 8.3 and 8.4, if the recovery on infringing sales, after reimbursing the Parties under Section 9.3(c)(iv)(A), were treated as Net Sales of a Licensed Product, and Biogen Idec shall receive any remaining portion of such recovery.

*** CONFIDENTIAL PORTIONS OMITTED AND FILED SEPARATELY WITH THE COMMISSION

(d) Joint Patents that are not Core IP, Other IP or Product-Specific IP.

(i) Biogen Idec shall have the first right, but not the obligation, to take action to obtain a discontinuance of any infringement of a Joint Patent that is not Core IP, Other IP or Product-Specific IP or bring suit against the Third Party infringer under any such Joint Patent, within six (6) months from the date of written notice of such infringement from Sangamo and to join Sangamo as a party plaintiff; provided that at Sangamo's discretion, Sangamo shall have the right to join such action, in which case the Parties shall jointly enforce such Joint Patent, using the same counsel as agreed by the Parties or separate counsel reasonably acceptable to the other Party. All decisions in such jointly enforced suit shall be made jointly.

(ii) If Biogen Idec is the sole enforcing Party, Sangamo shall cooperate with Biogen Idec in any such suit as reasonably requested by Biogen Idec and at Biogen Idec's expense and shall have the right to consult with Biogen Idec and to participate in and, if appropriate, be represented by independent counsel in such litigation at its own expense. Biogen Idec shall not, without Sangamo's prior written consent, enter into any settlement or consent decree that requires any payment by or admits or imparts any other liability to Sangamo or admits the invalidity or unenforceability of any such Joint Patents, which consent shall not be unreasonably withheld. If Biogen Idec has not taken steps to obtain a discontinuance of such infringement of such Joint Patents or filed suit against any such Third Party infringer of such Joint Patents within six (6) months from the date of notice of infringement, then Sangamo shall have the right to take action against such Third Party infringer; provided, however, that if Biogen Idec notifies Sangamo within such six (6)-month period of a reasonable business justification for not bringing such suit to enforce such Joint Patents and requests in writing that Sangamo not file such suit, then unless Sangamo disagrees with Biogen Idec's reasonable business justification, Sangamo shall not take action against the Third Party Infringer. If Sangamo notifies Biogen Idec within thirty (30) days after Biogen Idec's request that it disagrees with Biogen Idec's reasonable business justification for not enforcing such Joint Patents, then the disputed matter will be submitted to the Chief Executive Officer of each Party (or his/her nominee) for good faith discussions, and if such individuals are not able to resolve the matter within thirty (30) days of such submission, then notwithstanding the foregoing, Sangamo shall not have the right to enforce the applicable Joint Patent. Biogen Idec shall cooperate with Sangamo in any such suit for infringement of such Joint Patents brought by Sangamo against a Third Party (including joining as a party plaintiff) at Sangamo's request and expense, and shall have the right to consult with Sangamo and to participate in and be represented by independent counsel in such litigation at its own expense. Sangamo shall not, without Biogen Idec's prior written consent, which consent shall not be unreasonably withheld, enter into any settlement or consent decree that requires any payment by or admits or imparts any other liability to Biogen Idec or admits the invalidity or unenforceability of any such Joint Patents, or adversely impacts Biogen Idec's ability to maximize Net Sales or impacts market share of Licensed Products. The enforcing Party under this Section 9.3(d) shall keep the other Party reasonably informed of all material developments in connection with any such suit.

(iii) If the Parties are jointly enforcing Joint Patents that are not Core IP, Other IP or Product-Specific IP under this Section 9.3(d), then the Parties shall share equally all expenses incurred in connection with such activities. If one Party is enforcing such Joint Patents, such Party shall be solely responsible for all expenses incurred in connection with such activities by both Parties.

(iv) Any recoveries obtained by either Party as a result of any proceeding against a Third Party Infringer under this Section 9.3(d) shall be allocated as follows:

(A) If the Parties are jointly enforcing the applicable Joint Patents, then such recovery shall first be used to reimburse the Parties for all out-of-pocket litigation costs in connection with such litigation paid by the Parties, so that each Party bears the same amount of such costs (if the recoveries are insufficient to reimburse all costs), and any remaining portion of such recoveries shall be shared equally.

(B) If one Party is the enforcing Party, such recovery shall first be used to reimburse the enforcing Party for all out-of-pocket litigation costs in connection with such litigation paid by that Party, and then to reimburse out-of-pocket litigation costs paid by the other Party, and with respect to any remaining portion of such recoveries:

a. If Biogen Idec is the enforcing Party against an Infringement in the Field, Sangamo shall receive an amount equal to [***] of such amount, but not more than the amounts that would be payable, pursuant to Sections 8.3 and 8.4, if the recovery on infringing sales, after reimbursing the Parties under Section 9.3(d)(iv)(A), were treated as Net Sales of a Licensed Product, and Biogen Idec shall receive any remaining portion of such recovery; and

b. If Sangamo is the enforcing Party against an Infringement in the Field, Sangamo shall receive [***], and Biogen Idec shall receive [***], of the remaining portion of such recovery.

(e) Third Party Rights. For the avoidance of doubt, with respect to any Licensed Patent licensed to Sangamo by a Third Party, Biogen Idec's rights under this Section 9.3 may be exercised in Sangamo's name, provided that Biogen Idec's rights under Sections 9.3(b) and 9.3(c) shall be subject to the rights of such Third Party to enforce such Licensed Patent and to receive a portion of any recoveries obtained as a result of any proceeding against a Third Party Infringer under such Licensed Patent, which portion shall first be offset against any amounts to be received by Sangamo under Section 9.3(b)(ii)(B), 9.3(b)(ii)(C), 9.3(c)(iv)(B) or 9.3(c)(iv)(C) and if not fulfilled by such offset, subsequently offset against any amounts to be received by Biogen Idec under Section 9.3(b)(ii)(B), 9.3(b)(ii)(C), 9.3(c)(iv)(B) or 9.3(c)(iv)(C).

9.4 Third Party Licenses.

(a) Notification. If either Party becomes aware of any Third Party's patent or other intellectual property rights necessary or useful in connection with the manufacture, development or commercialization in the Field of any Collaboration Composition of Matter or Licensed Product ("*Third Party IP Rights*"), such Party shall promptly notify the other Party, and the Parties shall promptly thereafter meet to discuss such Third Party IP Rights.

(b) Third Party Core IP.

(i) Sangamo Rights. Sangamo shall have the first right to attempt to obtain a license to any Third Party IP Rights that are Third Party Core IP; provided that Sangamo shall not enter into any such license unless the Third Party IP Rights so licensed, to the extent otherwise within the scope of the definition of Licensed Technology, would be Controlled by Sangamo.

(ii) Biogen Idec Rights. If Sangamo has not obtained a license to any Third Party IP Rights that are Third Party Core IP pursuant to Section 9.4(b)(i) before the first dosing of the first subject in a Phase II Clinical Trial of a Licensed Product or, if notice under Section 9.4(a) for such Third Party IP Rights occurs after such event, within six (6) months after such notice is provided, Biogen Idec shall have the right, but not the obligation, to negotiate and enter into a license agreement with such Third Party with respect to such Third Party IP Rights; provided that Biogen Idec shall notify Sangamo in writing prior to initiating licensing negotiations for any such Third Party IP Rights and shall use good faith efforts to obtain commercially reasonable terms in the resulting license agreement and further provided that prior to entering into such license agreement, Biogen Idec shall provide Sangamo with a copy thereof and reasonable opportunity to comment thereon and shall consider all such comments of Sangamo in good faith. In addition, Biogen Idec may ask Sangamo to approve of Biogen Idec's entry into such license agreement, which approval Sangamo may grant or decline to grant, in its good faith discretion; provided, however, if Sangamo approves such license agreement, Sangamo shall have no right to subsequently claim that Biogen Idec did not use good faith efforts to obtain commercially reasonable terms for such license agreement. Each such license agreement entered into by Biogen Idec pursuant to this Section 9.4(b)(ii) shall contain provisions under which Biogen Idec is granted a license under such Third Party IP Rights permitting Biogen Idec to practice such Third Party IP Rights solely as necessary to practice, and no greater than the scope of, the license under Section 6.1(a). Notwithstanding the foregoing, if Biogen Idec has a good faith, reasonable belief that Sangamo's waiting to obtain any such license until the first dosing of the first subject in a Phase II Clinical Trial of a Licensed Product will result in such license not being available, and if there is no suitable substitute for the applicable Third Party Core IP, then Biogen Idec shall notify Sangamo in writing, and if Sangamo does not obtain such license within six (6) months after receipt of such notice, then Biogen Idec shall have the right to obtain such license as provided above in this Section 9.4(b)(ii).

(c) Third Party Other IP.

(i) Biogen Idec Rights. Biogen Idec shall have the first right to attempt to obtain a Narrow License to any Third Party IP Rights that are Third Party Other IP, and shall notify Sangamo in writing prior to initiating licensing negotiations for any such Third Party IP Rights. If Biogen Idec chooses to exercise such right, it shall negotiate with the applicable Third Party to either (A) obtain one license limited in scope to obtaining rights to such Third Party Other IP to develop, manufacture and commercialize Licensed Products in the Field in the

Territory (such license, a "*Narrow License*") or (B) obtain two (2) separate licenses under such Third Party Other IP, a Narrow License and a license to obtain rights under the Third Party Other IP for any purposes other than those included in a Narrow License (such license, a "*Broad License*"); provided that prior to entering into a Narrow License, Biogen Idec shall provide Sangamo with a copy thereof and reasonable opportunity to comment thereon and shall consider all such comments of Sangamo in good faith; and provided further that, unless the Parties agree otherwise in writing, Biogen Idec shall use good faith efforts to ensure that any Broad License that it obtains is non-exclusive. If Biogen Idec chooses to obtain a Narrow License and a Broad License, it shall (1) use good faith efforts to reasonably allocate the payment obligations between such licenses to be commensurate with the scope and exclusivity of the rights granted under each such license and (2) be solely responsible for all payments under any such Narrow License (subject to offsets under Section 8.6(b)(ii)(A)) and Broad License.

(ii) Sangamo Rights. At any time after the discussion under Section 9.4(a), Sangamo shall have the right to attempt to obtain a Broad License to any Third Party IP Rights that are Third Party Other IP, provided that unless the Parties agree otherwise in writing, Sangamo shall use good faith efforts to ensure that such Broad License is non-exclusive. If Biogen Idec has not obtained a Narrow License to any Third Party IP Rights that are Third Party Other IP pursuant to Section 9.4(c)(i) within six (6) months after notice is provided under Section 9.4(a) for such Third Party IP Rights, Sangamo shall have the right, but not the obligation, to negotiate and enter into a Narrow License with such Third Party with respect to such Third Party IP Rights; provided that (x) Sangamo shall not enter into any such license unless the Third Party IP Rights so licensed, to the extent otherwise within the scope of the definition of Licensed Technology, would be Controlled by Sangamo, (y) Sangamo shall notify Biogen Idec in writing prior to initiating licensing negotiations for a Narrow License to any such Third Party IP Rights and (z) prior to entering into such Narrow License, Sangamo shall provide Biogen Idec with a copy thereof and reasonable opportunity to comment thereon, shall consider all such comments of Biogen Idec in good faith, and shall not enter into such Narrow License without Biogen Idec's prior written approval, which shall not be unreasonably withheld. If Sangamo chooses to exercise such right, it shall negotiate with the applicable Third Party to either (A) obtain one Narrow License or (B) one Narrow License and one Broad License (to the extent that Sangamo has not already obtained a Broad License pursuant to the first sentence of this Section 9.4(c)(ii)). If Sangamo chooses to obtain a Narrow License and a Broad License, it shall (1) use good faith efforts to reasonably allocate the payment obligations between such licenses to be commensurate with the scope and exclusivity of the rights granted under each such license, (2) be solely responsible for all payments under any such Broad License and (3) unless the Parties agree otherwise in writing, use good faith efforts to ensure that such Broad License is non-exclusive.

(d) Third Party Product-Specific IP.

(i) Biogen Idec Rights. Biogen Idec shall have the first right to attempt to obtain a license to any Third Party IP Rights that are Third Party Product-Specific IP.

(ii) Sangamo Rights. If Biogen Idec has not obtained a license to any Third Party IP Rights that are Third Party Product-Specific IP pursuant to Section 9.4(d)(i)

within six (6) months after notice is provided under Section 9.4(a) for such Third Party IP Rights, Sangamo shall have the right, but not the obligation, to negotiate and enter into a license agreement with such Third Party with respect to such Third Party IP Rights; provided that Sangamo shall not enter into any such license unless the Third Party IP Rights so licensed, to the extent otherwise within the scope of the definition of Licensed Technology, would be Controlled by Sangamo; and provided further that Sangamo shall notify Biogen Idec in writing prior to initiating licensing negotiations for any such Third Party IP Rights and further provided that prior to entering into such license agreement, Sangamo shall provide Biogen Idec with a copy thereof and reasonable opportunity to comment thereon and shall consider all such comments of Biogen Idec in good faith, and shall not enter into such license agreement without Biogen Idec's prior written approval, which shall not be unreasonably withheld.

(e) Additional Provisions regarding Third Party Licenses.

(i) If Sangamo obtains a license during the Term from a Third Party to any Know-How or Patent Rights that fall within the definition of Licensed Technology, any such Third Party IP Rights, will be sublicensed to Biogen Idec, to the extent falling within the definition of Licensed Technology, only if:

(A) if such license is not for Third Party Core IP, Third Party Other IP or Third Party Product-Specific IP, prior to the execution of such license, Sangamo and Biogen Idec agree in writing to an allocation as between Biogen Idec and Sangamo with respect to all payments due under such proposed Third Party license agreement and a methodology for applying such allocation; and

(B) Biogen Idec provides Sangamo with written notice, prior to Sangamo's entry into such license agreement, in which (1) Biogen Idec consents to adding such Third Party IP Rights to the definition of Licensed Technology and such license agreement to the definition of Third Party License, (2) Biogen Idec agrees to make all payments, if any, allocated to Biogen Idec under this Agreement when due and provide all reports required under such license agreement on account of Biogen Idec's and its Affiliates' and Sublicensees' development, manufacture and commercialization of Licensed Products, and assumes the obligations of Biogen Idec set forth in Section 9.4(e)(ii) with respect to such license agreement as well as all other obligations of such license agreement that are applicable to sublicensees thereunder, and (3) Biogen Idec acknowledges in writing that its sublicense under such license agreement is subject to the terms and conditions of such license agreement.

Any such license to Licensed Technology that is sublicensed to Biogen Idec in accordance with clauses (A) (if applicable) and (B) of this Section 9.4(e)(i) shall be deemed a Third Party License until Biogen Idec notifies Sangamo in writing that it no longer desires to have such sublicense, in which case such sublicense shall automatically terminate and such license shall cease to be a Third Party License hereunder; provided, however, that Biogen Idec

shall remain responsible for all payments allocated to Biogen Idec under this Agreement (x) that are owed to the Third Party licensor on account of Biogen Idec's sublicense, grant of further sublicenses or the practice of such sublicense by or on behalf of Biogen Idec or its Affiliates or sublicensees and (y) which obligation to pay arose prior to the effective date of any such termination.

(ii) Biogen Idec shall provide to Sangamo, at least [***] before the applicable due date in such Third Party License but in no event more frequently than on a Calendar Quarter basis, all reports required under the applicable license agreement between Sangamo and such Third Party on account of Biogen Idec's and its Affiliates' and Sublicensees' development, manufacture and commercialization of Licensed Products, such that Sangamo may comply with all obligations under such license agreements. Provided it receives such information in a timely manner, Sangamo shall file such reports with, the applicable Third Party on or before the applicable due date.

(f) Additional Rights. Sangamo will use Commercially Reasonable Efforts to obtain consent [***] for Sangamo to grant a license to Biogen Idec, in accordance with Section 6.1(a), under Sangamo's interest in the Patent Rights listed in Schedule 9.4(f)(i) in those jurisdictions in which consent is needed for a joint owner of Patent Rights to grant a license. Sangamo will use Commercially Reasonable Efforts to obtain a non-exclusive, sublicensable license [***] to the Patent Rights listed in Schedule 9.4(f)(ii). Sangamo shall provide Biogen Idec drafts of any such license within a reasonable amount of time in advance of executing the license to permit Biogen Idec an opportunity to review and comment thereon. Sangamo shall consider in good faith, take into account and implement where possible the reasonable comments made by Biogen Idec with regards to such license. Upon receipt of such license, Sangamo shall [***] to obtain a sublicense under such license of the scope set forth in Section 6.1(a). Biogen Idec may exercise such option by providing written notice to Sangamo at any time when the licensed Patent Rights include an issued patent in the United States, Japan or a Major European Country that covers a Licensed Product being developed under this Agreement. Upon the exercise of such option, the license agreement between Sangamo and [***] shall be deemed to be an Existing Third Party License. For the avoidance of doubt, Biogen Idec shall not be obligated to make any additional payments hereunder in connection with exercising the option described in this Section 9.4(f).

(g) Vector Rights. Sangamo hereby grants Biogen Idec an exclusive option to obtain a sublicense, of the scope set forth in Section 6.1(a), under Sangamo's licenses granted in the following agreements: the Patent License Agreement between the [***], as amended; the Patent License Agreement between the [***]; and the Non-Exclusive Patent License Agreement between the [***] and Sangamo dated [***]. Biogen Idec may exercise such option with respect to one or more of such agreements by providing written notice to Sangamo at any time when the applicable licensed Patent Rights include an issued patent in the United States, Japan or a Major European Country that covers a Licensed Product being developed under this Agreement. Upon the exercise of such option with respect to a particular agreement, Sangamo's obtaining consent from the [***] (which consent Sangamo shall use Commercially Reasonable Efforts to obtain), if applicable, to grant such sublicense, and amendment of this Agreement to include all provisions

required by the applicable agreement, including terms Biogen Idec must include in its sublicense agreements, limitations on Biogen Idec's sublicense under such agreement and provisions applicable to Biogen Idec on Schedules 6.1(c)(v), 6.6(a) and 6.6(b), respectively, such agreement shall be deemed to be an Existing Third Party License. For the avoidance of doubt, any costs incurred by Sangamo in obtaining any such consent from [***] shall be borne by Sangamo, and Biogen Idec shall not be obligated to make any additional payments hereunder in connection with exercising the option described in this Section 9.4(g).

9.5 Declaratory Judgment Actions by Third Party.

(a) Biogen Idec's Rights. If a Third Party brings a declaratory judgment suit against Biogen Idec with respect to a Joint Patent that is not a Licensed Patent or any Patent Right owned or controlled by Biogen Idec, then Biogen Idec shall have the sole right, but not the obligation, to control the defense of such suit. Sangamo shall cooperate with Biogen Idec in any such suit as reasonably requested by Biogen Idec and at Biogen Idec's expense. If the suit involves any such Joint Patent, then Sangamo also shall have the right to consult with Biogen Idec, and to participate in and be represented by independent counsel in such litigation at its own expense. Biogen Idec shall not, without Sangamo's prior written consent, enter into any settlement or consent decree that requires any payment by or admits or imparts any other liability to Sangamo or admits the invalidity or unenforceability of any such Joint Patent, which consent shall not be unreasonably withheld.

(b) Sangamo's Rights. If a Third Party brings a declaratory judgment suit against Sangamo with respect to a Licensed Patent or Joint Patent that is not a Licensed Patent, then Sangamo shall have the sole right, but not the obligation, to control the defense of such suit. Biogen Idec shall cooperate with Sangamo in any such suit as reasonably requested by Sangamo and at Sangamo's expense, and Biogen Idec shall have the right to consult with Sangamo and to participate in and, if appropriate, be represented by independent counsel in such litigation at its own expense in the event the loss of such Patent Right would adversely impact Biogen Idec's ability to maximize Net Sales or impact market share of a Licensed Product. Sangamo shall not, without Biogen Idec's prior written consent, enter into any settlement or consent decree that requires any payment by or admits or imparts any other liability to Biogen Idec or admits the invalidity or unenforceability of any Licensed Patent or any Joint Patent that is not a Licensed Patent, which consent shall not be unreasonably withheld.

(c) Other Rights. If a Third Party brings a declaratory judgment suit against Biogen Idec with respect to a Licensed Patent, then Sangamo shall have the first right, but not the obligation, to control the defense of such suit with respect to such Licensed Patent. If Sangamo exercises such right, then Biogen Idec shall cooperate with Sangamo in any such suit as reasonably requested by Sangamo and at Sangamo's expense. Biogen Idec shall have the right to consult with Sangamo and to participate in and be represented by independent counsel in such litigation at its own expense. Sangamo shall not, without Biogen Idec's prior written consent, enter into any settlement or consent decree that requires any payment by or admits or imparts any other liability to Biogen Idec or admits the invalidity or unenforceability of any Licensed Patent, which consent shall not be unreasonably withheld. If Sangamo informs Biogen Idec that Sangamo does not intend to exercise its first right to control the defense of such suit, then Biogen

Idec shall control the defense of such suit and Sangamo shall cooperate with Biogen Idec in any such suit as reasonably requested by Biogen Idec and at Biogen Idec's expense. With respect to such Licensed Patent, Sangamo shall have the right to consult with Biogen Idec and to participate in and be represented by independent counsel in such litigation at its own expense. Biogen Idec shall not, without Sangamo's prior written consent, enter into any settlement or consent decree that requires any payment by or admits or imparts any other liability to Sangamo or admits the invalidity or unenforceability of any Licensed Patent, which consent shall not be unreasonably withheld.

9.6 Interference, Opposition, Revocation and Declaratory Judgment Actions by Parties. If the Parties mutually determine that, based upon the review of a Third Party's patent or patent application or other intellectual property rights and subject to applicable laws and regulations, it may be desirable in connection with a Licensed Product to provoke or institute an interference, opposition, revocation or declaratory judgment action with respect thereto, then the Parties shall consult with one another and shall reasonably cooperate in connection with such an action. Unless otherwise agreed to by the Parties, if the Third Party patent or patent application covers a Gene Target or the making, using or selling in the Field of a Licensed Product, then in connection with an opposition, revocation or declaratory judgment action Biogen Idec may, at its discretion, control such action and select counsel for such action. Biogen Idec shall be responsible for, and shall bear, all the out-of-pocket expenses of any such action brought by Biogen Idec. If the Third Party patent or patent application is otherwise directed to the Licensed Technology, Sangamo may, at its discretion, control such action and select counsel for such action. Sangamo shall be responsible for, and shall bear, all the out-of-pocket expenses of any such action brought by Sangamo. Unless otherwise agreed to by the Parties, in connection with an interference, the Party responsible for prosecuting the patent application involved in the interference may, at its discretion, control such action and select counsel for such action, and shall be responsible for and bear all the out-of-pocket expenses of, any such action. The prosecuting party shall consider in good faith, take into account and implement where possible the reasonable comments made by the non-prosecuting Party.

9.7 Third Party Infringement Suit. If a Third Party sues a Party or any of such Party's Affiliates or any Sublicensees (each Person so sued being referred to herein as a "*Sued Party*"), alleging that the conduct by either Party of the applicable Research Program or the development, manufacture or commercialization of any Licensed Product pursuant to this Agreement infringes or will infringe such Third Party's intellectual property, then if the Sued Party is entitled to indemnification pursuant to Article 11 on account of such suit, then the terms and conditions of Article 11 and not this Section 9.7 shall apply to such suit. If the Sued Party is not entitled to indemnification pursuant to Article 11 on account of such suit, then this Section 9.7 shall apply to suit. Upon the Sued Party's request and in connection with the Sued Party's defense of any such Third Party infringement suit, the other Party shall provide reasonable assistance to the Sued Party for such defense, at the Sued Party's expense. The Sued Party shall keep the other Party reasonably informed of all material developments in connection with any such suit and shall not, without the other Party's prior written consent, enter into any settlement or consent decree that requires any payment by or admits or imparts any other liability to the other Party. In the event that Biogen Idec is the Sued Party, Biogen Idec shall have the

right to offset [***] of (i) all costs incurred by Biogen Idec in defending the suit, (ii) all damages awarded in the suit, and (iii) all payments made by Biogen Idec for the purposes of resolving the dispute against Milestone Payments and Earned Royalties due under this Agreement for the applicable Licensed Product, except that such offset shall be decreased (or eliminated) so that the combined effect of offsets under this Section 9.7 and royalty reductions under Section 8.4(a)(i) and 8.4(a)(ii) does not reduce any payment due to Sangamo for a particular Licensed Product (A) by more than [***] from the amount that would otherwise be owed to Sangamo without taking into account such offsets and royalty reductions, or (B) (i) if such payment is a Milestone Payment, to an amount that is less than the aggregate amounts due under all Third Party Licenses on account of the event giving rise to such Milestone Payment and (ii) if such payment is a royalty payment, to an amount that is less than the aggregate amounts due under all Third Party Licenses on account of the Net Sales giving rise to such royalty payment.

10 CONFIDENTIALITY

10.1 Confidentiality. During period beginning on the Execution Date and ending on the tenth anniversary of the end of the Term, each Party shall maintain in confidence the Confidential Information of the other Party, shall not use or grant the use of the Confidential Information of the other Party except as expressly permitted under this Agreement (which includes the exercise of any rights or the performance of any obligations hereunder), and shall not disclose the Confidential Information of the other Party except on a need-to-know basis to such Party's directors, officers and employees, and to such Party's consultants working on behalf of such Party, Subcontractors, Sublicensees, distributors, potential Sublicensees and potential distributors, to the extent such disclosure is necessary in connection with such Party's activities as expressly authorized by this Agreement. To the extent that disclosure to any person is authorized by this Agreement (including Subcontractors as described in Section 2.6), prior to disclosure, a Party shall obtain, or shall have obtained prior to the date of this Agreement, written agreement of such person (or such person shall be subject to an obligation of professional ethics) to hold in confidence and not disclose, use or grant the use of the Confidential Information of the other Party except as expressly permitted under this Agreement. Each Party shall notify the other Party promptly upon discovery of any unauthorized use or disclosure of the other Party's Confidential Information.

10.2 Terms of Agreement. Neither Party shall disclose any terms or conditions of this Agreement to any Third Party without the prior written consent of the other Party, not to be unreasonably withheld; provided, that a Party may disclose the terms or conditions of this Agreement, (a) on a need-to-know basis to its legal and financial advisors to the extent such disclosure is reasonably necessary in connection with such Party's activities as expressly permitted by this Agreement, and (b) to a Third Party in connection with: (i) an equity investment in or by, or underwriting by, such Third Party, (ii) a merger, consolidation or similar transaction involving such Third Party, or (iii) the sale of all or substantially all of the assets of the Party to such Third Party; provided, further, that such Party shall make such disclosure only under appropriate conditions of confidentiality by the Third Party. Notwithstanding the foregoing, Sangamo may disclose the terms and conditions of this Agreement to the extent that such disclosure is required pursuant to the terms of any Third Party License, provided that the

licensor of such Third Party License is bound by a confidentiality obligation reasonably acceptable to Biogen Idec. Biogen Idec acknowledges that the licensors of all Existing Third Party Licenses are bound by confidentiality obligations reasonably acceptable to Biogen Idec.

10.3 Permitted Disclosures. Notwithstanding Sections 10.1 and 10.2, each Party may disclose Confidential Information of the other Party to the extent required by applicable law, regulation or order of a governmental agency or a court of competent jurisdiction, or in prosecuting or defending litigation; provided, that such Party shall provide advance written notice thereof (to the extent practicable) to the other Party, consult with the other Party with respect to such disclosure, use reasonable efforts to minimize the amount of information necessary to be disclosed and provide the other Party sufficient opportunity to object to any such disclosure or to request confidential treatment thereof. Notwithstanding Sections 10.1 and 10.2, (a) Sangamo may disclose Confidential Information of Biogen Idec solely to the extent required by any Third Party License or the [***] Agreement, provided that the licensor of such Third Party License or the [***], as applicable, is bound by a confidentiality obligation reasonably acceptable to Biogen Idec; and (b) Sangamo may provide [***] with Confidential Information of Biogen Idec solely to the extent required to comply with the terms and conditions of the [***] Award; provided that at least one week prior to any such disclosure of Confidential Information of Biogen Idec to [***], Sangamo shall notify Biogen Idec of such disclosure and provide to Biogen Idec a complete and accurate copy of the Confidential Information of Biogen Idec that Sangamo plans to provide to [***]. Biogen Idec acknowledges that the licensors of all Existing Third Party Licenses are bound by confidentiality obligations reasonably acceptable to Biogen Idec. The Parties acknowledge that either or both Parties may be obligated to file a copy of this Agreement with the United States Securities and Exchange Commission ("*SEC*") or other government authorities. Each Party shall be entitled to make such required filings subject to the provisions of this Section 10.3, and any request by the other Party to redact information in such required public filings shall be consistent with the legal requirements governing redaction.

10.4 Press Release and Publications. On or after the Effective Date, the Parties shall issue a joint press release relating to this Agreement, in the mutually agreed upon form in Schedule 10.4 or other form as mutually agreed by the Parties. Any other press release, public announcement, presentation or publication (including abstracts, posters, or other scientific publications) that Sangamo proposes to present or issue specifically regarding this Agreement or any of the activities performed hereunder or data arising therefrom, must be agreed upon by Biogen Idec in advance of its release, with at least thirty (30) days notice by Sangamo prior to any submission for publication. Sangamo shall not be required to seek the permission of Biogen Idec to repeat any such information that has already been publicly disclosed by Sangamo in accordance with this Section 10.4, provided such information remains accurate as of such time. Notwithstanding the foregoing, Sangamo shall have the right to issue press releases without the prior consent of Biogen Idec as required by the rules and regulations of the SEC, similar federal, state or foreign authorities, or any stock exchange on which its shares are traded, as determined in good faith by Sangamo's outside legal counsel, and provided that Sangamo shall use reasonable efforts to give Biogen Idec prior notice of the content and timing of such press release. Biogen Idec shall provide Sangamo with at least seven (7) days (in each case, to the extent practicable) advance notice prior to issuing a press release or making another public disclosure about any activities under this Agreement, any developments with respect to any Licensed Product, or Biogen Idec's intent to terminate this Agreement (except to the extent that any such information was previously publicly disclosed).

11 INDEMNIFICATION

11.1 Sangamo. Sangamo shall indemnify, defend and hold harmless Biogen Idec and its Affiliates and Sublicensees, and each of its respective directors, officers, employees and agents (collectively "*Biogen Idec Indemnified Party*"), from and against all losses, liabilities, damages and expenses, including reasonable attorneys' fees and costs (collectively, "*Liabilities*"), to the extent resulting from any claims, demands, actions or other proceedings by any Third Party arising out of (a) the breach of any representation, warranty or covenant by Sangamo under this Agreement; (b) the development, clinical testing, manufacture, use, handling, storage, distribution, marketing, promotion or sale of any Terminated Product by Sangamo, its Affiliates or licensees; (c) the recklessness, negligence or intentional misconduct of any Sangamo Indemnified Party; (d) the practice by Sangamo, its Affiliates or licensees of any of Sangamo's Licensed Technology; or (e) the breach by Sangamo of any Third Party License (other than such breach caused directly by the act or omission of Biogen Idec); except, in each case ((a), (b), (c) (d) and (e)), to the extent (i) arising out of the negligence, recklessness or intentional misconduct of any Biogen Idec Indemnified Party or a breach by Biogen Idec of any of its representations, warranties or covenants set forth in this Agreement or (ii) associated with a claim of infringement or misappropriation of Third Party intellectual property rights based on a specific activity conducted by Sangamo at the JSC's direction, notwithstanding Sangamo's good faith objection to conducting such activity based on intellectual property concerns, as a result of Biogen Idec's exercise of its final decision-making authority.

11.2 Biogen Idec. Biogen Idec shall indemnify, defend and hold harmless Sangamo and its Affiliates, and each of its respective directors, officers, employees and agents (collectively "*Sangamo Indemnified Party*"), from and against all Liabilities to the extent resulting from any claims, demands, actions or other proceedings by any Third Party arising out of (a) the breach of any representation, warranty or covenant by Biogen Idec under this Agreement; (b) the development, clinical testing, manufacture, use, handling, storage, distribution, marketing, promotion or sale of Licensed Products by Biogen Idec, its Affiliates, Sublicensees or distributors; (c) the recklessness, negligence or intentional misconduct of any Biogen Idec Indemnified Party; or (d) a claim of infringement or misappropriation of Third Party intellectual property rights based on a specific activity conducted by Sangamo at the JSC's direction, notwithstanding Sangamo's good faith objection to conducting such activity based on intellectual property concerns, as a result of Biogen Idec's exercise of its final decision-making authority; except, in each case ((a), (b), (c) and (d)), to the extent caused by the negligence, recklessness or intentional misconduct of any Sangamo Indemnified Party or a breach by Sangamo of any of its representations, warranties or covenants set forth in this Agreement.

11.3 Procedure. If a Party (the "*Indemnitee*") intends to claim indemnification under this Article 11, it shall promptly notify the other Party (the "*Indemnitor*") in writing of any claim, demand, action or other proceeding for which the Indemnitee intends to claim such indemnification, and the Indemnitor shall have the right to participate in, and, to the extent the

Indemnitor so desires, to assume the defense thereof with counsel of its choice, which counsel shall be reasonably acceptable to the Indemnitee; provided that an Indemnitee shall have the right to retain its own counsel at its expense. Further, the obligations of this Article 11 shall not apply to amounts paid in settlement of any claim, demand, action or other proceeding if such settlement is effected without the consent of the Indemnitor, which consent shall not be unreasonably withheld, conditioned, or delayed. The Indemnitor shall not settle any claim, demand, action or other proceeding without the prior written consent of the Indemnified Party, not to be unreasonably withheld, conditioned or delayed, unless the settlement involves only the payment of money. The failure to deliver written notice to the Indemnitor within a reasonable time after the commencement of any such action, to the extent prejudicial to its ability to defend such action, shall relieve the Indemnitor of any obligation to the Indemnitee under this Article 11. The Indemnitee, its employees and agents, shall reasonably cooperate with the Indemnitor and its legal representatives in the investigation of any claim, demand, action or other proceeding covered by this Article 11.

12 INSURANCE

12.1 Insurance.

(a) Biogen Idec. During the Research Term (and for a tail period of [***] years thereafter) and for so long as Biogen Idec develops or sells Licensed Products anywhere in the world (and for a tail period of [***] years thereafter), Biogen Idec shall, at its expense, maintain comprehensive General Liability insurance covering death and bodily injury and property damage, in a combined single limit of not less than [***], which policy shall include coverage for products liability and blanket contractual liability applicable to this Agreement. All of the insurance policies required under this Section 12.1(a) shall be underwritten by insurers having a A.M. Best's Rating of A-VII or higher. Notwithstanding the foregoing, Biogen Idec may self-insure to the same extent that it self-insures for any of its other products.

(b) Sangamo. During the Research Term and for a tail period of [***] years thereafter, Sangamo shall, at is expense, maintain commercial general liability insurance with reputable and financially secure insurance carriers to cover its indemnification obligations under Section 11.1 with limits of not less than [***] per occurrence and in the aggregate. All of the insurance policies required under this Section 12.1(b) shall be underwritten by insurers having a A.M. Best's Rating of A-VII or higher.

12.2 Certificates of Insurance. At the request of a Party, the other Party shall furnish proof of all insurance coverages outlined in this Article 12 in the form of insurance certificates reasonably acceptable to the other Party. Each Party shall provide the other Party with written notice at least thirty (30) days prior to the cancellation, non-renewal or material change in such insurance or self-insurance which materially adversely affect the rights of the other Party hereunder.

13 HSR COMPLIANCE.

13.1 HSR Filing. Each of Biogen Idec and Sangamo will, as soon as practicable after, and in any event within fourteen (14) business days after, the Execution Date (or such later time as may be agreed to in writing by the Parties), file with the United States Federal Trade Commission ("*FTC*") and the Antitrust Division of the United States Department of Justice ("*DOJ*"), any HSR Filing required with respect to the transactions contemplated hereby. The Parties will cooperate with one another to the extent necessary in the preparation of any such HSR Filing. Sangamo and Biogen Idec shall each request early termination of the waiting period under the HSR Act. Each Party will be responsible for its own costs and expenses (other than filing fees, which Biogen Idec will pay) associated with any HSR Filing.

13.2 HSR Clearance. In furtherance of obtaining HSR Clearance for an HSR Filing filed under Section 13.1, Sangamo and Biogen Idec will use their respective Commercially Reasonable Efforts to resolve as promptly as practicable any objections that may be asserted and to respond as promptly as practicable to requests for supplemental information that may be issued from the FTC, the DOJ or other governmental authority with respect to this Agreement or the transactions contemplated by this Agreement under any antitrust, competition or trade regulatory law. Each Party's Commercially Reasonable Efforts shall include, but will not be limited to, such Party's counsel's undertaking to cooperate and keep the other Party's counsel appropriately informed of material communications from the FTC, the DOJ or other governmental authority with respect to this Agreement or the transactions contemplated by this Agreement under any antitrust, competition or trade regulatory law. In connection with obtaining such HSR Clearance from the FTC, the DOJ or any other governmental authority, Biogen Idec and its Affiliates will not be required to (a) sell, divest (including through a license or a reversion of licensed or assigned rights), hold separate, transfer or dispose of any assets (including any assets or rights licensed under this Agreement), operations, rights, product lines, businesses or interest therein of Biogen Idec or any of its Affiliates (or consent to any of the foregoing actions); or (b) litigate or otherwise formally oppose any determination (whether judicial or administrative in nature) by a governmental authority seeking to impose any of the restrictions referenced in clause (a) of this Section 13.2.

13.3 Effectiveness of Certain Provisions. Except for Article 10 (Confidentiality), Article 13 (HSR Compliance), Sections 14.2 (Termination due to Failure to Obtain HSR Clearance), 14.3 (Termination due to Material Adverse Event), 15.1 (Governing Law), 15.2 (Dispute Resolution) and 15.6 (Notices), the definitions in Sections 1.71 (HSR Act), 1.72 (HSR Clearance), 1.73 (HSR Clearance Date), 1.74 (HSR Filing), 1.97 (Material Adverse Effect) and 1.146 (Schedule Revision Date) and the proviso in the first sentence of Section 7.2, which shall each become effective on the Execution Date, the provisions of this Agreement shall not be effective until the Effective Date.

14 TERM; TERMINATION; EFFECTS OF TERMINATION

14.1 Term. Unless earlier terminated as provided herein, the term of this Agreement shall commence on the Effective Date and shall continue until such time as all payment obligations with respect to all Licensed Products expire (the "*Term*").

14.2 Termination Due to Failure to Obtain HSR Clearance. If the HSR Clearance Date has not occurred on or prior to seventy-five (75) days after the effective date of the latest HSR Filing made by the Parties, this Agreement will terminate in its entirety (a) at the election of

either Party immediately upon notice to the other Party, if the FTC or the DOJ has instituted (or threatened to institute) any action, suit or proceeding including seeking, threatening to seek or obtaining a preliminary injunction under the HSR Act against Biogen Idec and Sangamo to enjoin or otherwise prohibit the transactions contemplated by this Agreement, or (b) at the election of either Party, immediately upon notice to the other Party, if the Parties have not resolved any and all objections of the FTC and DOJ as contemplated by Section 13.2.

14.3 Termination Due to Material Adverse Event. This Agreement will terminate in its entirety if a Material Adverse Event has occurred and Biogen Idec provides notice of termination to Sangamo within two (2) days after the Schedule Revision Date that such Material Adverse Event has occurred.

14.4 Termination for Breach. Failure by a Party to comply with any of its material obligations contained herein shall entitle the Party not in default to give to the Party in default notice specifying the nature of the default, requiring it to cure such default, and stating its intention to terminate if such default is not cured. If such default is not cured within ninety (90) days after the receipt of such notice or, if not capable of cure within such 90 day period, a reasonable plan to cure such default has not been put in place within such 90 day period and the Party in default has not continued to diligently cure such default in accordance with such plan (or in the event such default is solely based upon a Party's failure to pay any amounts due hereunder such default is not cured within thirty (30) days after the receipt of such notice), the Party not in default shall be entitled, without prejudice to any of its other rights conferred on it by this Agreement, and in addition to any other remedies available to it by law or in equity, to terminate this Agreement; provided, that any right to terminate under this Section 14.4 shall be stayed in the event that, during such cure period, the Party alleged to have been in default shall have initiated dispute resolution in good faith in accordance with Section 15.2 with respect to the alleged default, which stay shall last so long as the initiating Party diligently and in good faith cooperates in the prompt resolution of such dispute resolution proceedings.

14.5 Termination for Insolvency. This Agreement may be terminated by either Party upon notice to the other should the other Party: (a) consent to the appointment of a receiver or a general assignment for the benefit of creditors or (b) file or consent to the filing of a petition under any bankruptcy or insolvency law or have any such petition filed against it which has not been stayed within sixty (60) days of such filing.

14.6 Termination by Biogen Idec for Convenience. At any time during the Term, Biogen Idec may terminate this Agreement in its entirety immediately following [***] written notice to Sangamo. Upon receipt of such notice, notwithstanding anything in this Agreement to the contrary, Sangamo shall have the right to commence winding down any activities conducted by Sangamo under this Agreement and shall notify Biogen Idec in writing whether it elects to do so within thirty (30) days of receiving such notice. Subject to the last sentence of this Section 14.6, Biogen Idec shall reimburse Sangamo for its reasonable internal and external expenses incurred in connection with such wind-down during the [***] notice period (the "*Notice Period*"). For clarity, following Biogen Idec's written notice of termination pursuant to the first sentence of this Section 14.6, Biogen Idec's payment obligations shall remain in effect for the duration of the Notice Period; provided that the aggregate amount that Biogen Idec pays to Sangamo during the Notice Period, whether for wind-down expenses, under the budgets for the Research and Development Plans or a combination thereof, shall not exceed the budgeted amount for the Research and Development Plans during the Notice Period.

*** CONFIDENTIAL PORTIONS OMITTED AND FILED SEPARATELY WITH THE COMMISSION

14.7 Termination by Biogen Idec for Safety. At any time during the Term, Biogen Idec may terminate this Agreement in its entirety immediately upon written notice to Sangamo if Biogen Idec determines in good faith that the medical risk/benefit of any Licensed Product is so unfavorable that it would be incompatible with the welfare of patients to continue developing or commercializing such Licensed Product; provided that prior to exercising such termination right, Biogen Idec shall notify Sangamo, after which the Parties shall discuss in detail the reasons for such proposed termination, which discussions may include, if requested by Sangamo, discussions between appropriate executives of each Party. The Licensed Product to which such determination applies shall be deemed a "*Safety Terminated Product*".

14.8 Effect of Expiration or Termination.

(a) Under Sections 14.4 or 14.5 or by Biogen Idec under Section 14.6 or 14.7. If this Agreement is terminated (x) by either Party under Section 14.4 or 14.5, (y) by Biogen Idec under Section 14.6 or (z) by Biogen Idec under Section 14.7 (provided that the provisions of Sections 14.8(a)(ii)-14.8(a)(vii) shall only apply to Licensed Products that are not Safety Terminated Products and to Safety Terminated Products for which Sangamo subsequently demonstrates to Biogen Idec's reasonable satisfaction development and commercialization may be safely resumed), in addition to any remedy available at law, then upon any such termination of this Agreement:

(i) All licenses under Section 6.1 from Sangamo to Biogen Idec shall terminate;

(ii) Biogen Idec shall assign to Sangamo all INDs filed for Licensed Products;

(iii) Biogen Idec hereby grants to Sangamo an exclusive, worldwide, fully-paid, royalty-free, perpetual, irrevocable license, with the right to sublicense through multiple tiers, under the Program Data, to develop, manufacture, have manufactured, use, sell, offer to sell, import and otherwise commercialize Terminated Products as they exist at the time of notice of termination.

(iv) To the extent requested by Sangamo, with respect to any Licensed Product for which Sangamo or Biogen Idec has conducted development or obtained Marketing Approval (each a "*Terminated Product*"), the Parties shall negotiate, in good faith, an agreement on commercially reasonable terms, with respect to the acquisition or licensing of the following rights in respect of the Terminated Product(s):

(A) assignment by Biogen Idec to Sangamo of all Marketing Approvals and other regulatory filings in respect of the Terminated Products;

(B) grant by Biogen Idec to Sangamo of an exclusive, worldwide license, with the right to sublicense through multiple tiers, under all intellectual property rights Controlled by Biogen Idec and its Affiliates at the time of notice of termination that (x) arose under this Agreement or (y) are or have been used by or on behalf of Biogen Idec or its Affiliates or Sublicensees in connection with a Terminated Product and that in either case ((x) and (y)) are necessary or useful to develop, manufacture, sell, offer to sell, import and otherwise commercialize such Terminated Product(s) as they exist at the time of notice of termination (such intellectual property, the "*Biogen Idec Licensed IP*") solely to develop, manufacture, sell, offer to sell, import and otherwise commercialize such Terminated Product(s). For the avoidance of doubt, Sangamo shall not have the right to any future intellectual property rights that become Controlled by Biogen Idec after the notice of termination; provided, however, that the Biogen Idec Licensed IP will include Patent Rights that become Controlled by Biogen Idec after the notice of termination if such Patent Rights claim priority to the Biogen Idec Licensed IP existing as of the notice of termination.

(C) If the Parties fail to execute such agreement within [***] after Sangamo's request, the disputed terms of such agreement shall be referred to the Parties' respective Chief Executive Officers (or their designees) for resolution. If these individuals are unable to resolve the remaining disputed terms of such agreement within [***] of the request for such resolution, then the [***] shall have the right to determine all such remaining disputed terms. Within [***] after the determination of such terms, [***] shall notify [***] of its acceptance or rejection of such terms, which election shall be at [***] sole discretion. Upon [***] acceptance of such terms, such terms shall be binding on the Parties, and the Parties shall promptly enter into an agreement containing such terms. Upon [***] rejection of such terms, no such acquisition or license shall be granted unless the Parties agree otherwise in writing.

(v) At Sangamo's request, Biogen Idec shall assign to Sangamo all right, title and interest in and to the trademarks then used by Biogen Idec in connection with the commercialization of Terminated Products (excluding any such trademarks that include, in whole or part, any corporate name or logo of Biogen Idec or its Affiliate or Sublicensee).

(vi) Biogen Idec shall, at Sangamo's expense, provide reasonable consultation and assistance for a period of no more than [***] days for the purpose of transferring or transitioning to Sangamo all Know-How in the Biogen Idec Licensed IP not already in Sangamo's possession and, at Sangamo's request, all then-existing commercial arrangements relating specifically to Terminated Products that Biogen Idec is able, using reasonable commercial efforts, to transfer or transition to Sangamo, in each case, to the extent reasonably necessary or useful for Sangamo to commence or continue developing, manufacturing, or commercializing Terminated Products. The foregoing shall include transferring, upon request of Sangamo, any agreements with Third Party suppliers or vendors that specifically and solely cover the supply or sale of Terminated Products. If any such contract between Biogen Idec and a Third Party is not assignable to Sangamo (whether by such contract's terms or because such contract does not relate specifically and solely to Terminated Products) but is otherwise reasonably necessary or useful for Sangamo to commence or continue developing, manufacturing, or commercializing Terminated Products or if Biogen Idec manufactures the Terminated Product itself (and thus there is no contract to assign), then unless

Biogen Idec terminated this Agreement pursuant to Section 14.4, Biogen Idec shall reasonably cooperate with Sangamo to negotiate for the continuation of such license or supply from such entity, and Biogen Idec shall supply such Terminated Product, as applicable, to Sangamo, for a reasonable period (not to exceed [***]) until Sangamo establishes an alternative, validated source of supply for the Terminated Products. Sangamo shall pay Biogen Idec for such supply an amount equal to Biogen Idec's cost of supplying, without markup.

(vii) Sangamo shall have the right to purchase from Biogen Idec any or all of the inventory of Terminated Products held by Biogen Idec as of the date of termination (that are not committed to be supplied to any Third Party or Sublicensee, in the ordinary course of business, as of the date of termination) at a price equal to Biogen Idec's actual cost to acquire or manufacture such inventory. Sangamo shall notify Biogen Idec within thirty (30) days after the effective date of termination of whether Sangamo elects to exercise such right and shall take possession of and pay Biogen Idec for such inventory within thirty (30) days thereafter.

(b) Alternative to Termination by Biogen Idec under Section 14.4. If Biogen Idec has the right to terminate this Agreement pursuant to Section 14.4, then in addition to any remedies available at law, Biogen Idec may by notice to Sangamo keep this Agreement in effect but [***] the future Milestone Payments due to Sangamo by [***] and [***] the future Earned Royalties by [***] of the amount specified in Article 8 after all applicable reductions are taken pursuant to Sections [***], but subject to Section [***]. Such reductions shall be credited against any award obtained by Biogen Idec on account of such material breach.

(c) Survival of Certain Obligations. Expiration or termination of this Agreement shall not relieve the Parties of any obligation that accrued before such expiration or termination. In addition to all other provisions contained in this Agreement that by their terms survive expiration or termination of this Agreement, the following provisions also shall survive expiration or termination of this Agreement: Sections 2.8(c), 2.9, 6.1(a)(ii), 6.1(b), 6.1(c)(iii), 6.2(b), 6.3(f)(i) (but only if this Agreement is terminated under Section 14.4 for Sangamo's material breach), 6.3(f)(ii) (but only if this Agreement is terminated under Section 14.4 for Sangamo's material breach), 6.5, 7.3, 8.8, 8.9, 8.10, 8.11, 9.1(a), 9.1(b) and 14.8 and Articles 10, 11, 12 and 15, and all definitions related to the foregoing.

15 MISCELLANEOUS

15.1 Governing Law. This Agreement shall be governed by the laws of Delaware without regard to its choice of law principles, provided, that the United Nations Convention on Contracts for the International Sale of Goods shall not apply.

15.2 Dispute Resolution. Matters within the authority of the JSC shall be resolved as provided in Section 3.4. For matters outside the authority of the JSC:

(a) Notice of Dispute. The Parties recognize that a bona fide dispute as to certain matters may from time to time arise during the Term that relates to either Party's rights or obligations hereunder. In the event of any dispute between the Parties with respect to any matter relating to this Agreement, one Party may provide the other Party with a notice of dispute.

(b) Attempted Resolution. Upon a Party's receipt of a notice of dispute, the Parties shall first use their good faith efforts to resolve such dispute among themselves without resorting to Executive Resolution under Section 15.2(c).

(c) Executive Resolution. In the event that such dispute is not resolved within thirty (30) days of providing a notice of dispute, the dispute shall be taken to the Parties' respective Chief Executive Officers (or their designees) for resolution. If these individuals are unable to resolve the dispute within thirty (30) days of the request for such meeting, then the Parties shall be free to pursue any avenue available to them under law or equity to resolve the dispute.

15.3 Assignment. Neither this Agreement nor any right or obligation hereunder may be assigned or delegated, in whole or part, by either Party without the prior express written consent of the other, which consent shall not be withheld unreasonably; provided, that either Party may assign or delegate any right or obligation hereunder, in whole or in part, to any of its Affiliates so long as such entity remains an Affiliate, or to its successor in interest in connection with a Change of Control of such Party. Any permitted assignee shall assume all obligations of its assignor under this Agreement, and any permitted assignment shall be binding on the successors of the assigning Party. Any purported assignment in violation of this Section 15.3 shall be void.

15.4 Independent Contractors. The relationship of the Parties hereto is that of independent contractors. Neither Party hereto shall be deemed to be the agent, partner or joint venturer of the other for any purpose as a result of this Agreement or the transactions contemplated thereby.

15.5 Further Actions. Each Party agrees to execute, acknowledge and deliver such further documents and instruments and to perform all such other acts as may be necessary or appropriate in order to carry out the purposes and intent of this Agreement.

15.6 Notices. All requests and notices required or permitted to be given to the Parties hereto shall be given in writing, shall expressly reference the section(s) of this Agreement to which they pertain, and shall be delivered to the other Party by mail, any commercial delivery service or by facsimile transmission, in all cases with confirmation of receipt and with delivery to be effective on receipt, at the appropriate address as set forth below or to such other addresses as may be designated in writing by the Parties from time-to-time during the Term.

If to Biogen Idec:

Biogen Idec
225 Binney Street
Cambridge, MA 02142
Att: Executive Vice President and General Counsel
Facsimile: (866) 546-2758

*** CONFIDENTIAL PORTIONS OMITTED AND FILED SEPARATELY WITH THE COMMISSION

Copy to:
Ropes & Gray LLP
Prudential Tower, 800 Boylston Street
Boston, MA 02199-3600 U.S.A.
Att: [***], Esq.
Facsimile: (617) 235-0706

If to Sangamo:

Sangamo BioSciences, Inc.
Point Richmond Tech Center II
501 Canal Boulevard, Suite A100
Richmond, California 94804
Att: Chief Executive Officer
Fax: 510-236-8951

Copy to:
Cooley LLP
3175 Hanover Street
Palo Alto, CA 94304
Att: [***], Esq.
Fax: 650-849-7400

15.7 Force Majeure. Nonperformance of a Party (other than for the payment of money) shall be excused to the extent that performance is rendered impossible by strike, fire, earthquake, flood, governmental acts or orders or restrictions, terrorist acts, failure of suppliers, or any other reason where failure to perform is beyond the reasonable control and not caused by the negligence, intentional conduct or misconduct of the nonperforming Party; provided, that the nonperforming Party shall use Commercially Reasonable Efforts to resume performance as soon as reasonably practicable.

15.8 No Consequential Damages. IN NO EVENT SHALL A PARTY BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THIS AGREEMENT OR THE EXERCISE OF ITS RIGHTS HEREUNDER, INCLUDING LOST PROFITS ARISING FROM OR RELATING TO ANY BREACH OF THIS AGREEMENT, REGARDLESS OF ANY NOTICE OF SUCH DAMAGES. NOTHING IN THIS SECTION 15.8 IS INTENDED TO LIMIT OR RESTRICT THE DAMAGES AVAILABLE FOR A BREACH OF ARTICLE 10 OR THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF EITHER PARTY UNDER ARTICLE 11 ABOVE.

15.9 Complete Agreement. This Agreement constitutes the entire agreement between the Parties regarding the subject matter hereof, and all prior representations, understandings and agreements regarding the subject matter hereof, either written or oral, expressed or implied, are superseded and shall be of no effect, including the CDA. The foregoing shall not be interpreted as a waiver of any remedies available to either Party as a result of any breach, prior to the Effective Date, by the other Party of its obligations pursuant to the CDA.

*** CONFIDENTIAL PORTIONS OMITTED AND FILED SEPARATELY WITH THE COMMISSION

15.10 Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed to be an original and together shall be deemed to be one and the same agreement.

15.11 Headings. The captions to the several sections hereof are not a part of this Agreement, but are included merely for convenience of reference only and shall not affect its meaning or interpretation.

15.12 Construction. This Agreement was negotiated and executed in English, and the original language version shall be controlling; all communications and notices hereunder shall be in English. The Parties acknowledge that they have both had the opportunity to negotiate regarding any issues in connection with this Agreement that were of concern to them and, therefore, expressly waive the benefit of any presumption that ambiguities should be construed in favor of or against either Party. Except where the context otherwise requires, the use of any gender herein shall be deemed to be or include the other genders, the use of the singular shall be deemed to include the plural (and vice versa) and the word "or" is used in the inclusive sense commonly associated with the term "and/or". The words "include", "includes" and "including" shall be deemed to be followed by the phrase "without limitation." The word "will" shall be construed to have the same meaning and effect as the word "shall." Unless the context requires otherwise, (a) any definition of or reference to any agreement, instrument or other document herein shall be construed as referring to such agreement, instrument or other document as from time to time amended, supplemented or otherwise modified (subject to any restrictions on such amendments, supplements or modifications set forth herein), (b) any reference herein to any Person shall be construed to include the Person's successors and assigns, (c) the words "herein", "hereof" and "hereunder", and words of similar import, shall be construed to refer to this Agreement in its entirety and not to any particular provision hereof and (d) all references herein to sections or Exhibits shall be construed to refer to sections or Exhibits of this Agreement.

15.13 Amendment. No amendment, modification or supplement of any provision of this Agreement shall be valid or effective unless made in writing and signed by a duly authorized officer of each Party.

15.14 Waiver. No provision of the Agreement shall be waived by any act, omission or knowledge of a Party or its agents or employees except by an instrument in writing expressly waiving such provision and signed by a duly authorized officer of the waiving Party. The waiver by either of the Parties of any breach of any provision hereof by the other Party shall not be construed to be a waiver of any succeeding breach of such provision or a waiver of the provision itself.

15.15 Severability. If any clause or portion thereof in this Agreement is for any reason held to be invalid, illegal or unenforceable, the same shall not affect any other portion of this Agreement, as it is the intent of the Parties that this Agreement shall be construed in such fashion as to maintain its existence, validity and enforceability to the greatest extent possible. In any such event, this Agreement shall be construed as if such clause or portion thereof had never been contained in this Agreement, and there shall be deemed substituted therefor such provision as will most nearly carry out the intent of the Parties as expressed in this Agreement to the fullest extent permitted by applicable law.

[The remainder of this page is left blank intentionally.]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective duly authorized officers as of the day and year first above written.

SANGAMO BIOSCIENCES, INC.

By: _____

Name: _____

Title: _____

BIOGEN IDEC MA INC.

By: _____

Name: _____

Title: _____

Exhibits and Schedules [***]

Exhibit A	[***]
Exhibit B	[***]

Schedule 1.26	**[***]**
Schedule 1.37	[***]
Schedule 1.49(a)	[***]
Schedule 1.49(b)	[***]
Schedule 1.86	[***]
Schedule 1.89	[***]
Schedule 1.114(A)	[***]
Schedule 1.114 (B)	[***]
Schedule 1.129	[***]
Schedule 6.1(c)(v)	[***]
Schedule 6.3(g)	[***]
Schedule 6.6(a)	[***]
Schedule 6.6(b)	[***]
Schedule 6.6(c)	[***]
Schedule 7.2(b)	[***]
Schedule 7.2(c)	[***]
Schedule 7.2(d)	[***]
Schedule 7.2(e)	[***]
Schedule 7.2(f)	[***]
Schedule 8.4	[***]
Schedule 9.2(b)(ii)	[***]
Schedule [***]	[***]
Schedule 10.4	Joint Press Release

*** CONFIDENTIAL PORTIONS OMITTED AND FILED SEPARATELY WITH THE COMMISSION

EXHIBIT A
BT Development Plan

(Attached)

*** CONFIDENTIAL PORTIONS OMITTED AND FILED SEPARATELY WITH THE COMMISSION

EXHIBIT B

[***]

*** CONFIDENTIAL PORTIONS OMITTED AND FILED SEPARATELY WITH THE COMMISSION

Amendment of 2013 Stock Incentive Plan on Reduction of Share Reserve

On or about March 19, 2014, the Board of Directors of Sangamo BioSciences, Inc. (the "Company") adopted the following resolutions relating to the reduction of share reserves under the Company's 2013 Stock Incentive Plan and 2010 Employee Stock Purchase Plan:

"Reduction of Reserves under Stock Incentive Plan and ESPP

WHEREAS, that the Company has filed a definitive proxy statement for the 2014 Annual Meeting of Stockholders to be held on April 21, 2014 (the "2014 Annual Meeting"), which includes a proposal requesting stockholder approval of an amendment to the Company's Amended and Restated Certificate of Incorporation (the "Charter") to increase of the number of authorized shares of Common Stock from 80,000,000 shares to 160,000,000 shares (the "Charter Proposal");

WHEREAS, to ensure that the Company has sufficient number of authorized shares of Common Stock under the Charter to complete the Offering prior to the approval of the Charter Proposal at the 2014 Annual Meeting, the Board has determined that it is in the best interest of the Company and its stockholders to temporarily reduce the number of shares of Common Stock reserved under the Company's 2010 Employee Stock Purchase Plan ("ESPP") and 2013 Stock Incentive Plan (the "Stock Incentive Plan") for a period beginning on the pricing date of the Offering and ending on the earlier of (i) effective date of the amendment to the Charter following the stockholder approval of the Charter Proposal at the 2014 Annual Meeting and (ii) the effective date of any amendment to the Charter other than the amendment covered by the Charter Proposal to increase the number of authorized shares of Common Stock (the "Reduction Period").

RESOLVED, that the Stock Incentive Plan is hereby amended to reduce its share reserve by 2,505,119 shares of Common Stock from 14,097,808 shares to 11,592,689 shares and that the ESPP is hereby amended to reduce its share reserve by 1,167,763 shares of Common Stock from 2,100,000 shares to 932,237 shares, with each such reduction to be effective only during the Reduction Period; upon the expiration of the Reduction Period the number of shares reserved under the Stock Incentive Plan and the ESPP shall automatically be returned to the number of shares of Common Stock reserved under each such plan immediately prior the pricing date of the Offering (as adjusted pursuant to Section III. B of the ESPP and Article I, Section V.F. of the Stock Incentive Plan)."

Exhibit 10.3

NINTH AMENDMENT

This Ninth Amendment, effective as of the date set forth above the signatures of the parties below, amends the Sangamo License Agreement dated May 9, 1996 ("SANGAMO LICENSE AGREEMENT") between the Massachusetts Institute of Technology ("M.I.T."), a Massachusetts corporation having its principal office at 77 Massachusetts Avenue, Cambridge, Massachusetts, 02139, USA and Sangamo Biosciences Inc. ("COMPANY"), a corporation having its principal office at 501 Canal Blvd., Suite A100, Richmond, Ca 94804

NOW, THEREFORE, the parties hereby agree to modify the May 9, 1996 LICENSE AGREEMENT as follows:

Article 12 shall be deleted and replaced with the following:

12 – DISPUTE RESOLUTION

12.1 Except for the right of either party to apply to a court of competent jurisdiction for a temporary restraining order, a preliminary injunction, or other equitable relief to preserve the status quo or prevent irreparable harm, any and all claims, disputes or controversies arising under, out of, or in connection with the Agreement, which the parties shall be unable to resolve within sixty (60) days shall be taken to the chief executive officer (or his designee) of LICENSEE and the Provost of M.I.T. for resolution; provided that any dispute relating to patent validity or infringement shall be resolved in the first instance and solely by a court of competent jurisdiction in the courts of the Commonwealth of Massachusetts or the United States District Court for the District of Massachusetts. If these individuals are unable to resolve the dispute within thirty (30) business days of the request for such meeting, then such dispute, other than any dispute relating to patent validity and infringement, shall be subject to non-binding mediation. The party raising such dispute for non-binding mediation shall promptly advise the other party of such action in a writing which describes in reasonable detail the nature of the dispute. By not later than five (5) business days after the recipient has received such notice of non-binding mediation, each party shall have selected for itself a representative, and shall additionally have advised the other party in writing of the name and title of such representative. By not later than ten (10) business days after the date of such notice of non-binding mediation, the party against whom the dispute shall be raised shall select a mediation firm in the Boston area and such representatives shall schedule a date with such firm for a mediation hearing. The parties shall enter into good faith mediation and shall share the costs equally. If the representatives of the parties have not been able to resolve the dispute within fifteen (15) business days after such mediation hearing, then the parties shall be free to pursue any action available to them under law or equity in a court of competent jurisdiction in courts of the Commonwealth of Massachusetts or the United States District Court for the District of Massachusetts to resolve any and all claims, disputes or controversies arising under, out of, or in connection with this Agreement.

12.2 Notwithstanding the foregoing, nothing in this Article shall be construed to waive any rights or timely performance of any obligations existing under this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Ninth Amendment to the Patent License Agreement to be executed by their duly authorized representatives as of the date first above written.

The Effective Date of this Ninth Amendment is Mar 14, 2014.

Massachusetts Institute of Technology

By: /S/ LITA L. NELSEN
Name: LITA L. NELSEN
Title: DIRECTOR TECHNOLOGY LICENSING OFFICE

Sangamo BioScience, Inc.

By: /S/ EDWARD LANPHIER
Name: EDWARD LANPHIER
Title: PRESIDENT AND CEO

Exhibit 31.1

CERTIFICATION

I, Edward O. Lanphier II, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Sangamo BioSciences, Inc. ("registrant")

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a — 15(f) and 15d — 15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors:

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 7, 2014

/s/ Edward O. Lanphier II
Edward O. Lanphier II
President and Chief Executive Officer

Exhibit 31.2

CERTIFICATION

I, H. Ward Wolff, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Sangamo BioSciences, Inc. ("registrant")

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a — 15(f) and 15d — 15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors:

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 7, 2014

/s/ H. Ward Wolff
H. Ward Wolff
Executive Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 32.1

Certification Pursuant to 18 U.S.C. §1350, as Adopted Pursuant to §906 of the Sarbanes-Oxley Act of 2002

Each of the undersigned hereby certifies pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002 in his capacity as an officer of Sangamo BioSciences, Inc. (the "Company"), that:

(1) the Quarterly Report of the Company on Form 10-Q for the quarterly period ended March 31, 2014, as filed with the Securities and Exchange Commission (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Edward O. Lanphier II

Edward O. Lanphier II
President and Chief Executive Officer
(Principal Executive Officer)

Date: May 7, 2014

/s/ H. Ward Wolff

H. Ward Wolff
Executive Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

Date: May 7, 2014