As filed with the United States Securities and Exchange Commission on April 1, 2004

Registration No. 333-113062

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

AMENDMENT NO. 1
TO
FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

SANGAMO BIOSCIENCES, INC.
(Exact name of Registrant as specified in its charter)

Delaware	**68-0359556**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)

501 Canal Boulevard, Suite A100
Richmond, CA 94804
(510) 970-6000
(Address, Including Zip Code, and Telephone Number,
Including Area Code, of Registrant's Principal Executive Offices)

Edward O. Lanphier II
Sangamo BioSciences, Inc.
501 Canal Boulevard, Suite A100
Richmond, CA 94804
(510) 970-6000
(Name, Address, Including Zip Code, and Telephone Number,
Including Area Code, of Agent for Service)

Copies to:

John W. Larson, Esquire
Angela C. Hilt, Esquire
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One Market, Spear Street Tower
San Francisco, CA 94105
(415) 442-1000

Approximate date of commencement of proposed sale to the public:
From time to time after the effective date of this registration statement.

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. o

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. ☒

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box. o

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. We may not sell any of the securities described in this prospectus until the registration statement that we have filed with the Securities and Exchange Commission to cover the securities is effective. This prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED APRIL 1, 2004

PROSPECTUS

SANGAMO BIOSCIENCES, INC.

$30,000,000
of
Common Stock and Warrants

We may offer the shares of common stock and warrants to purchase shares of common stock covered by this prospectus from time to time in one or more issuances. We refer to the common stock and warrants to purchase common stock collectively as the securities.

This prospectus provides you with a general description of the securities that we may offer. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement together with the documents incorporated by reference and described under the heading "Where You Can Find More Information" before you make your investment decision.

We will sell the securities to underwriters or dealers, through agents, or directly to investors.

An investment in the securities offered under this prospectus involves a high degree of risk. You should carefully consider the risk factors described on pages 3-13 of this prospectus.

Our common stock trades on the Nasdaq National Market under the symbol SGMO. On March 31, 2004, the last reported sale price of our common stock on the Nasdaq National Market was $6.18.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is , 2004.

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ABOUT THIS PROSPECTUS

This prospectus is part of a "shelf" registration statement we filed with the Securities and Exchange Commission. By using a shelf registration statement, we may sell any combination of securities described in this prospectus from time to time for an aggregate offering price of up to $30,000,000.

You should rely only on the information contained in or specifically incorporated by reference into this prospectus or a supplement. No dealer, sales person or other individual has been authorized to give any information or to make any representations not contained in this prospectus. If given or made, such information or representations must not be relied upon as having been authorized by us.

This prospectus does not constitute an offer to sell or a solicitation of an offer to buy, the securities offered hereby in any jurisdiction where, or to any person to whom, it is unlawful to make such offer or solicitation.

The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of securities. Neither the delivery of this prospectus nor any sale made hereunder shall, under any circumstances, create an implication that there has not been any change in the facts set forth in this prospectus or in our affairs since the date of this prospectus.

STATEMENTS REGARDING FORWARD-LOOKING INFORMATION

Some statements contained in this prospectus are forward-looking with respect to our operations, economic performance and financial condition. Statements that are forward-looking in nature should be read with caution because they involve risks and uncertainties, which are included, for example, in specific and general discussions about:

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

Various terms and expressions similar to them are intended to identify these cautionary statements. These terms include: "anticipates," "believes," "continues," "could," "estimates," "expects," "intends," "may," "plans," "seeks," "should" and "will." Actual results may differ materially from those expressed or implied in those statements. Factors that could cause these differences include, but are not limited to, those discussed under "Risk Factors." Sangamo undertakes no obligation to publicly release any revisions to forward-looking statements to reflect events or circumstances arising after the date of this prospectus.

ABOUT SANGAMO BIOSCIENCES, INC.

Sangamo is the worldwide leader in the research, development, and commercialization of DNA binding proteins for the therapeutic regulation and repair of disease-associated genes. Our proprietary technology platform is based on the engineering of a naturally occurring class of proteins referred to as zinc finger DNA binding proteins (ZFPs). We believe that ZFPs can be targeted to virtually any gene in the human genome or the genome of any other organism. Our scientists use engineered ZFPs to make ZFP transcription factors, or ZFP TFs, which are proteins that bind to DNA and are able to turn genes on or off. Alternatively, ZFPs may be engineered to create zinc finger nucleases (ZFNs). Engineered ZFNs can precisely cut genomic DNA at a preselected location, facilitating the transfer of "corrected" or "donor" genetic information into the site and thus may allow the repair or correction of genes which carry disease-causing mutations.

We were incorporated in Delaware in September 1995. From our inception through March 30, 2004, our activities have related primarily to establishing and operating a biotechnology research and development organization and developing relationships with our corporate collaborators. Our revenues have consisted primarily of revenues from our corporate partners for ZFP TFs, contractual payments from strategic partners for research programs and research milestones, and federal government research grant funding.

Our principal offices are located at 501 Canal Boulevard, Suite A100, Richmond, California 94804, and our telephone number there is (510) 970-6000.

RISK FACTORS

An investment in the securities offered through this prospectus involves certain risks. You should carefully consider the following risks, as well as other information contained elsewhere in this prospectus or incorporated by referenced in this prospectus and in any accompanying prospectus supplement.

We are increasing the focus of our research and development programs on human therapeutics, which may increase operating expenditures and the uncertainty of our business. We are increasing the emphasis and focus of our research and development activities on ZFP Therapeutics and are moving away from our historic emphasis on Enabling Technology agreements. In the short term, this change in resource allocation will reduce our revenues and increase operating expenditures due to larger financial outlays to fund preclinical studies, manufacturing, and clinical research. The transition will also increase the visibility of our lead therapeutic programs and the potential impact on the stock price of news releases relating to these programs.

Our partner, Edwards Lifesciences, is planning to initiate Phase I/II clinical testing in our lead ZFP Therapeutic program, and ZFP Therapeutics have never before been tested in humans. If our lead ZFP Therapeutic fails its initial safety study, it could damage our ability to attract new investors and corporate partners. Edwards Lifesciences filed an investigational new drug (IND) application with the U.S. Food and Drug Administration (FDA) on February 10, 2004. Under the FDA's review process, the FDA has 30 days to comment on an IND filing. The IND application has completed the 30 day review period and is now active. We expect the principal investigator to begin enrolling patients into the Phase I/II clinical trial in the second quarter of 2004. The Phase I/II study of our lead therapeutic will be a highly visible test of the Company's ZFP Therapeutic approach. Since we have increased our focus on ZFP Therapeutic research and development, investors will increasingly assess the value of the Company's technology based on the continued progress of ZFP Therapeutic products into and through clinical trials. If the initial safety study of our lead therapeutic was halted due to safety concerns, this would negatively affect the value of the Company's stock.

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 our collaborators and strategic partners. Our proprietary research programs consist of research which is funded solely by the Company and where the Company retains exclusive rights to therapeutic products generated by the research. This is in contrast to certain of our research programs that may be funded by corporate partners and in which we may share rights to any resulting products. We have conducted proprietary research since inception, however, in the past year, our strategy has shifted toward placing greater emphasis on proprietary research and we expect this trend will continue in 2004. Conducting proprietary research programs may not generate corresponding revenue and may create conflicts with our collaborators or strategic partners. The implementation of this strategy will involve substantially greater business risks, the expenditure of significantly greater funds than our historic research activities and will require substantial commitments of time from our management and staff.

In addition, disagreements with our collaborators or strategic partners could develop 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 collaboration or strategic partnering agreements and negatively impact our relationship with existing collaborators and strategic partners, which could reduce our revenue and delay or terminate our product development.

Our potential therapeutic products are subject to a lengthy and uncertain regulatory process, and if these potential products are not approved, we will not be able to commercialize those products. The FDA must approve any human therapeutic products before they 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 or our commercial partner must submit an Investigational New Drug (IND) application to the FDA. The FDA has 30 days to comment on the IND. If the FDA does not comment on the IND, we or our commercial partner may begin clinical trials.

Clinical trials are subject to oversight by institutional review boards and the FDA and:

- must be conducted in conformance with the FDA's good clinical practices and other applicable regulations;
- must meet requirements for institutional review board oversight;
- must meet requirements for informed consent;
- are subject to continuing FDA oversight;
- may require large numbers of test subjects; and
- may be suspended by us, our commercial partner, or the FDA 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 or the conduct of these trials.

Clinical trials are lengthy and are typically conducted in three sequential phases, but the phases may overlap or be combined. Each trial must be reviewed and approved by an independent ethics committee or institutional review board before it can begin. Phase I usually involves the initial introduction of the investigational drug into healthy volunteers or patients to evaluate certain factors, including its safety, dosage tolerance and, if possible, to gain an early indication of its effectiveness. Phase II usually involves trials in a limited patient population to evaluate dosage tolerance and appropriate dosage, identify possible adverse effects and safety risks, and evaluate preliminarily the efficacy of the drug for specific indications. Phase III trials usually further evaluate clinical efficacy and test further for safety by using the drug in its final form in an expanded patient population. Later clinical trials may fail to support the findings of earlier trials, which would delay, limit or prevent regulatory approvals.

While we have stated our intention to file 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.

In addition, our proposed clinical studies will require review from the Recombinant DNA Advisory Committee, or RAC, which is the advisory board to the National Institutes of Health, or 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 filing date.

Our gene regulation 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. Although we have generated ZFP TFs for hundreds of gene sequences, we have not created ZFP TFs 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 ZFP TFs in mammalian cell culture, yeast, insects, plants, and animals, we have not yet done so 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. Also, delivery of ZFP TFs into cells and organisms, including humans, in these and other environments is limited by a number of technical challenges, which we may be unable to surmount. This is a particular challenge for therapeutic

applications of our technology that will require the use of gene transfer systems that may not be effective for the delivery of our ZFP TFs in a particular therapeutic application.

The expected value and utility of our ZFP TFs is in part based on our belief that the targeted or specific regulation of gene expression and targeted gene repair may enable us to develop a new therapeutic approach as well as to help scientists better understand the role of human, animal, and other genes in disease and to aid their efforts in drug discovery and development. We also believe that the regulation of gene expression and targeted gene insertion 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.

We are currently engaged in the research and development of a new application of our technology platform: ZFP-mediated gene correction. Using this technique, Sangamo scientists have engineered gene-specific ZFPs to cut DNA at a specific site within a target gene, and to then replace the adjacent sequences with new DNA. In so doing, we are attempting to "repair" or "correct" an abnormal or disease-related mutation or DNA sequence. ZFP-mediated gene correction is at an early stage of development. Our scientists have shown ZFP-mediated gene correction to work in isolated cells; however, a significant amount of additional research will be needed before this technique can be evaluated in animals or plants and subsequently tested for applications in human healthcare and plant agriculture.

We may be unable to license gene transfer technologies that we may need to commercialize our ZFP TF technology. In order to regulate a gene in a cell, the ZFP TF must be efficiently delivered to the cell. We have licensed certain gene transfer technologies for use with our Enabling Technologies, which are ZFP TFs used in pharmaceutical discovery research and protein production. We are evaluating these systems and other technologies which may need to be used in the delivery of ZFP TFs 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. 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, clinical testing, and/or commercialization of our therapeutic product candidates.

We do not currently have the infrastructure or capability to manufacture therapeutic products on a commercial scale. In order for us to commercialize these products directly, we would need to develop, or obtain through outsourcing arrangements, the capability to execute all of these functions. If we are unable to develop or otherwise obtain the requisite preclinical, clinical, regulatory, manufacturing, marketing and sales capabilities, we would be unable to directly commercialize our therapeutics products which would limit our future growth.

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. The failure of our technology to provide safe, effective, useful, or commercially viable approaches to the discovery and development of these products would significantly limit our business and future growth and would adversely affect our value.

Adverse events in the field of gene therapy may negatively impact regulatory approval or public perception of 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.

Our stock price is also influenced by public perception. Recent reports of serious adverse events in a retroviral gene transfer trial for infants with severe combined immunodeficiency (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 SCID, or whether the specific company's clinical trials were put 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.

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. We have incurred significant losses and our net losses for the past three fiscal years ended 2003, 2002 and 2001 were $10.4 million, $29.8 million and $25.2 million, respectively. To date, our revenues have been generated from Enabling Technology agreements, strategic partners, and federal government research grants. In 2003, we have placed more emphasis on higher-value therapeutic product development and related strategic partnerships and less emphasis on our Universal GeneTools® collaborations. This shift in emphasis has the potential to increase the return on investment to our stockholders by allocating capital resources to higher value, therapeutic product development activities. At the same time, it increases our financial risk by increasing 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 shares. Our business is subject to all of the risks inherent in the development of a new technology, which include 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;
- successfully transition from a company with a research focus to a company capable of supporting commercial activities; and
- attract and enter into research collaborations with research and academic institutions and scientists.

Commercialization of our technologies will depend, in part, on strategic partnering with other companies. If we are not able to find strategic partners in the future or our strategic 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 our value. 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 those partners 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, which would cause associated product development to slow or cease. There can be no assurance that we will be able to establish additional strategic collaborations for ZFP Therapeutic product development. We may require significant time to secure additional collaborations or strategic partners because we need to effectively market the benefits of our technology to these future collaborators and strategic partners, which use the time and efforts of research and development personnel and our management. Further, each collaboration or strategic partnering arrangement will involve the negotiation of terms that may be unique to each collaborator or strategic partner. These business development efforts may not result in a collaboration or strategic partnership.

The loss of our current or any future strategic 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 TFs for specific genes. If any strategic 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.

Our existing strategic partnering agreements are, and we would expect any future arrangement to be, based on the achievement of milestones. Under the strategic partnering agreements, we expect to receive revenue for the research and development of a ZFP Therapeutic product based on achievement of specific milestones. Achieving these milestones will depend, in part, on the efforts of our strategic partner as well as our own. In contrast, our historic Enabling Technology agreements only pay us to supply ZFP TFs for the collaborator's independent use, rather than for future results of the collaborator's efforts. If we, or any strategic partner, fail to meet specific milestones, then the strategic partnership may be terminated, which could decrease our revenues.

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 TF 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 satisfactorily effective and less expensive, as has been the case with technologies competitive with our Universal Gene Tools®. The effectiveness of these competing products has reduced the revenues generated by our Universal Gene Tools®. Competing technologies may include other methods of regulating gene expression. ZFP TFs have broad application in the life sciences and compete with a broad array of new technologies and approaches being applied to genetic research by many companies. Competitive technologies include those used to analyze the expression of genes in cells or tissues, determine gene function, discover new

genes, analyze genetic information, and regulate genes. Competing proprietary technologies with our product development focus include:

- For ZFP Therapeutics: small molecule drugs, monoclonal antibodies, recombinant proteins, antisense and siRNA approaches
- For our Enabling Technology Applications:
    - Universal GeneTools®: antisense, siRNA
    - high throughput screening: cDNA, naturally occurring cell lines
    -

protein production: gene amplification

- In addition to possessing competing technologies, our competitors include biotechnology companies with:
  - substantially greater capital resources than ours;
  - larger research and development staffs and facilities than ours;
  - greater experience in product development and in obtaining regulatory approvals and patent protection; and
- 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.

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, that 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.

Early commercial application in drug discovery research of our engineered ZFP TFs delivered to our Universal GeneTools® collaborators have not produced useful results in every case. In the past, some of our Universal GeneTools® collaborators were unable to substantiate the effects of our gene regulation technology. Generally, failures were re-evaluated at Sangamo by using our most current approach. In some cases, additional ZFP TFs were designed and tested for these targets, and data were generated at Sangamo, or by our partners, confirming the ability to regulate these targets. However, there can be no assurance that we will be able to regulate all gene targets. Although we have been able to achieve targeted activation or repression of numerous genes, the degree of activation or repression is

not always sufficient to allow our collaborators to realize their objectives. If we are unsuccessful in engineering ZFP TFs that achieve positive results for our collaborators or strategic partners, this would significantly harm our business by reducing our revenues.

We anticipate continuing to incur operating losses for the next several years. If material losses continue for a significant period, we may be unable to continue our operations. We have generated operating losses since we began operations in 1995. 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 TF technology since inception, which has and will continue to require significant research and development expenditures. To date, we have generated our revenues from Universal GeneTools® collaboration agreements, strategic partnering agreements, and federal government research grants. As of December 31, 2003, we had an accumulated deficit of approximately $83.3 million. We expect to incur losses for the foreseeable future. These losses will increase as we 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, we may not be able to sustain 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 2005, we may 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 $100 million per product. We cannot be certain that we will be able to obtain financing on terms acceptable to us, or at all. If adequate funds are not available, our business and our ability to develop our technology and ZFP Therapeutic products would be harmed.

Our stock price has been volatile and may continue to be volatile, which could result in substantial losses for investors. During the past two years, our common stock price has fluctuated significantly, ranging from a low of $2.60 to a high of $5.50 during the year ended December 31, 2003, and a low of $1.30 to a high of $10.25 during the year ended December 31, 2002. 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 the following factors, some of which are beyond our control:

- changes in market valuations of similar companies;
-

deviations in our results of operations from the guidance given by us or estimates of securities analysts;

- 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;
- announcements by us or our partners providing updates on the progress or development status of ZFP Therapeutics; and
- future sales of our common stock or other securities by the company, management or directors, liquidation of institutional funds that comprised large holdings of Sangamo stock.

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. We are a small company with 57 full-time employees as of February 18, 2004, and 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. The success of our technology development programs depends on our ability to attract and retain highly trained personnel and 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. We are not presently aware of any plans of specific employees to retire or otherwise leave the company. 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.

If conflicts arise between us and our collaborators, strategic partners, scientific advisors, or directors, 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, strategic partners, or scientific advisors or directors 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 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.

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 which 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 generally do not control the prosecution of patent applications that we license from third parties; therefore, the patent applications may not be prosecuted 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 which is based on the use of zinc finger 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 cannot guarantee that our intellectual property will not be challenged by third parties. One of our licensed foreign patents, which forms the basis of five European Regional Phase patents, has been opposed by a third party. We cannot predict the outcome of these opposition proceedings. We cannot guarantee that the patent will not be invalidated or that the granted claims will not have to be narrowed to overcome the opposition.

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.

Regulatory approval, if granted, may 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 the appropriate regulatory authorities, so 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.

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.

Laws or public sentiment may limit the production of genetically modified agricultural products in the future, and these laws could reduce our ability to sell these 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 may develop genetically modified agricultural products for ourselves or with our strategic partners. 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 we are able to obtain regulatory approval for genetically modified products, 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 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.

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 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.

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, our certificate of incorporation and our bylaws and 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 certificate of incorporation:

- states that stockholders may not act by written consent but only at a stockholders' meeting;
- establishes advance notice requirements for nominations for election to the board of directors or proposing matters that can be acted upon at stockholders' meetings; and
- limits who may call 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.

Insiders have substantial control over Sangamo and could delay or prevent a change in corporate control. The interest of management could conflict with the interest of our other stockholders. Our executive officers and directors beneficially own, in the aggregate, 28% of our outstanding common stock. As a result, these stockholders, if they choose to act together, will be able to have a material impact on all matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions. This could have the effect of delaying or preventing a change of control of Sangamo, which in turn could reduce the market price of our stock.

USE OF PROCEEDS

Except as may be otherwise set forth in the prospectus supplement accompanying this prospectus, we will use the net proceeds we receive from sales of the securities offered hereby for general corporate purposes, including the development and support of our sales and marketing organization, support for our continuing research and development efforts and the funding of acquired businesses and technologies.

PLAN OF DISTRIBUTION

We may sell the securities being offered by us in this prospectus:

- directly to purchasers;
- through agents;
- through dealers;
- through underwriters; or
- through a combination of any of these methods of sale.

We and our agents and underwriters may sell the securities being offered by us in this prospectus from time to time in one or more transactions:

- at a fixed price or prices which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

Offers to purchase securities may be solicited directly by us, or by agents designated by us, from time to time. Any such agent, which may be deemed to be an underwriter as that term is defined in the Securities Act of 1933, as amended (the "Securities Act"), involved in the offer or sale of the securities in respect of which this prospectus is delivered will be named, and any commissions payable by us to such agent will be set forth, in the applicable prospectus supplement.

If an underwriter is, or underwriters are, utilized in the offer and sale of securities in respect of which this prospectus and the accompanying prospectus supplement are delivered, we will execute an underwriting agreement with such underwriter(s) for the sale to it or them and the name(s) of the underwriter(s) and the terms of the transaction, including any underwriting discounts and other items constituting compensation of the underwriters and dealers, if any, will be set forth in such prospectus supplement, which will be used by the underwriter(s) to make resales of the securities in respect of which this prospectus and such prospectus supplement are delivered to the public. The securities will be acquired by the underwriters for their own accounts and may be sold by the underwriters from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. Any initial public offering price and any discounts or concessions allowed or reallowed or paid to dealers may be changed from time to time.

If a dealer is utilized in the sale of the securities in respect of which this prospectus is delivered, we will sell such securities to the dealer, as principal. The dealer may then resell such securities to the public at varying prices to be determined by such dealer at the time of resale. The name of the dealer and the terms of the transaction will be identified in the applicable prospectus supplement.

If an agent is used in an offering of securities being offered by this prospectus, the agent will be named, and the terms of the agency will be described, in the applicable prospectus supplement relating

to the offering. Unless otherwise indicated in the prospectus supplement, an agent will act on a best efforts basis for the period of its appointment.

If indicated in the applicable prospectus supplement, we will authorize underwriters or their other agents to solicit offers by certain institutional investors to purchase securities from the issuer pursuant to contracts providing for payment and delivery at a future date. Institutional investors with which these contracts may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and others. In all cases, these purchasers must be approved by the issuer of the securities. The obligations of any purchaser under any of these contracts will not be subject to any conditions except that (a) the purchase of the securities must not at the time of delivery be prohibited under the laws of any jurisdiction to which that purchaser is subject and (b) if the securities are also being sold to underwriters, the issuer must have sold to these underwriters the securities not subject to delayed delivery. Underwriters and other agents will not have any responsibility in respect of the validity or performance of these contracts.

Certain of the underwriters, dealers or agents utilized by us in any offering hereby may be customers of, including borrowers from, engage in transactions with, and perform services for us or one or more of our affiliates in the ordinary course of business. Underwriters, dealers, agents and other persons may be entitled, under agreements which may be entered into with us, to indemnification against certain civil liabilities, including liabilities under the Securities Act.

Until the distribution of the securities is completed, rules of the Commission may limit the ability of the underwriters and certain selling group members, if any, to bid for and purchase the securities. As an exception to these rules, the representatives of the underwriters, if any, are permitted to engage in certain transactions that stabilize the price of the securities in accordance with Regulation M, but only in the case of a fixed-price offering. Such transactions may consist of bids or purchases for the purpose of pegging, fixing or maintaining the price of the securities.

If underwriters create a short position in the securities in connection with the offering thereof (i.e., if they sell more securities than are set forth on the cover page of the applicable prospectus supplement), the representatives of such underwriters may reduce that short position by purchasing securities in the open market. Any such representatives also may elect to reduce any short position by exercising all or part of any over-allotment option described in the applicable prospectus supplement.

Any such representatives also may impose a penalty bid on certain underwriters and selling group members. This means that if the representatives purchase securities in the open market to reduce the underwriters' short position or to stabilize the price of the securities, they may reclaim the amount of the selling concession from the underwriters and selling group members who sold those shares as part of the offering thereof.

In general, purchases of a security for the purpose of stabilization or to reduce a syndicate short position could cause the price of the security to be higher than it might otherwise be in the absence of such purchases. The imposition of a penalty bid might have an effect on the price of a security to the extent that it were to discourage resales of the security by purchasers in the offering.

Neither we nor any of the underwriters, if any, makes any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of the securities. In addition, neither we nor any of the underwriters, if any, makes any representation that the representatives of the underwriters, if any, will engage in such transactions or that such transactions, once commenced, will not be discontinued without notice.

The anticipated date of delivery of the securities offered by this prospectus will be described in the applicable prospectus supplement relating to the offering. The securities offered by this prospectus may or may not be listed on a national securities exchange or a foreign securities exchange. We cannot give

any assurances that there will be a market for any of the securities offered by this prospectus and any prospectus supplement.

THE SECURITIES WE MAY OFFER

The descriptions of the securities contained in this prospectus, together with the applicable prospectus supplement, summarize the material terms and provisions of the various types of securities that we may offer. We will describe in the applicable prospectus supplement relating to any securities the particular terms of the securities offered by that prospectus supplement; however, the prospectus supplement may not change the information related to our plan of distribution or the securities we are offering. We will also include in the prospectus supplement information, where applicable, about material United States federal income tax considerations relating to the securities, and the securities exchange or market, if any, on which the securities will be listed.

We may sell from time to time, in one or more offerings, one or more of the following securities:

- common stock; and
- warrants to purchase common stock.

These securities may be offered and sold from time to time for an aggregate offering price not to exceed $30,000,000.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

DESCRIPTION OF COMMON STOCK

For a description of the material terms and provisions of our common stock and each other class of our securities which qualifies or limits our common stock, please see the applicable prospectus supplement, as well as the description of our capital stock in our Registration Statement on Form 8-A dated March 31, 2000 which is incorporated by reference in this prospectus.

DESCRIPTION OF WARRANTS

We may issue warrants to purchase common stock. The warrants may be issued independently or together with any other securities and may be attached to or separate from the other securities. Each series of warrants may be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent. The warrants will be evidenced by warrant certificates. Unless otherwise specified in the prospectus supplement, the warrant certificates may be traded separately from the common stock with which the warrant certificates were issued. Warrant certificates may be exchanged for new warrant certificates of different denominations at the office of an agent that we will appoint. Until a warrant is exercised, the holder of a warrant does not have any of the rights of a holder of our common stock and is not entitled to any payments on any common stock issuable upon exercise of the warrants.

The prospectus supplement relating to a series of warrants will describe the specific terms of the warrants including the following:

- the title of the warrants;
- the aggregate number of the warrants;
- the price or prices at which the warrants will be issued and the currency in which the price for the warrants may be paid;

- the price at which and the currency in which the common stock purchasable upon exercise of the warrants may be purchased band the various factors considered in determining that price;
- the dates on which the right to exercise the warrants will commence and expire and whether the exercise of warrants will be at the option of holders, at our option, or automatic;
- whether the warrants are exercisable by payment of cash, surrender of other securities, or both;
- provisions for changes to or adjustments in the exercise price of the warrants;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- if applicable, the designation and terms of the other securities with which the warrants are issued and the number of the warrants issued with each such other security;
- if applicable, the date on and after which the warrants and the related other securities will be separately transferable;
- whether the warrants will be issued in registered form or bearer form;
- information with respect to book-entry procedures, if any;
- if applicable, a discussion of material U.S. federal income tax considerations; and
- any other terms of the warrants, including terms, procedures, and limitations relating to the exchange or exercise of the warrants.

LEGAL MATTERS

The legality of the common stock offered by this prospectus has been passed upon for us by Morgan, Lewis & Bockius LLP, San Francisco, California. As of March 25, 2004, members of Morgan, Lewis & Bockius LLP beneficially owned a total of 444,360 shares of our common stock.

EXPERTS

The consolidated financial statements of Sangamo BioSciences, Inc. appearing in our Annual Report (Form 10-K/A) for the year ended December 31, 2003, have been audited by Ernst & Young LLP, independent auditors, as set forth in their report thereon included therein and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission. The registration statement that contains this prospectus, including the exhibits to the registration statement, contains additional information about us and the securities offered by this prospectus.

We file annual, quarterly and special reports, proxy statements and other information with the Commission. You may read and copy any document we file at the Commission's Public Reference Room at 450 Fifth Street, N.W., Washington, D.C. 20549. Please call the Commission at 1-800-SEC-0330 for further information on the Public Reference Room. Our public filings, including reports, proxy and information statements, are also available on the Commission's web site at http://www.sec.gov.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The Securities and Exchange Commission allows us to "incorporate by reference" information from other documents that we file with them, which means that we can disclose important information by referring to those documents. The information incorporated by reference is considered to be part of this prospectus, and information that we file later with the Commission will automatically update and supersede this information. We incorporate by reference into this prospectus the documents listed below, and any future filings (other than the portions thereof deemed to be "furnished" to the Commission pursuant to Item 9 or Item 12) we make with the Commission under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 prior to the termination of this offering:

- our annual report on Form 10-K for the year ended December 31, 2003, filed with the Commission on February 24, 2004, as amended by Form 10-K/A filed with the Commission on April 1, 2004;
- our current report on Form 8-K filed with the Commission on February 11, 2004; and
- the description of our common stock contained in our registration statement on Form 8-A filed under Section 12(g) of the Securities Exchange Act of 1934 with the Commission on March 31, 2000, including any amendment or reports filed for the purpose of updating such description.

To the extent that any statement in this prospectus is inconsistent with any statement that is incorporated by reference and that was made on or before the date of this prospectus, the statement in this prospectus shall supersede such incorporated statement. The incorporated statement shall not be deemed, except as modified or superceded, to constitute a part of this prospectus or the registration statement. Statements contained in this prospectus as to the contents of any contract or other document are not necessarily complete and, in each instance, we refer you to the copy of each contract or document filed as an exhibit to the registration statement.

We will furnish without charge to each person, including any beneficial owner, to whom a copy of this prospectus is delivered, upon written or oral request, a copy of the information that has been incorporated into this prospectus by reference (except exhibits, unless they are specifically incorporated into this prospectus by reference). You should direct any requests for copies to:

Sangamo BioSciences
501 Canal Boulevard, Suite A100
Richmond, CA 94804
(510) 970-6000

PART II

INFORMATION NOT REQUIRED IN THE PROSPECTUS

ITEM 14. Other Expenses of Issuance and Distribution.

The following table sets forth the costs and expenses in connection with the issuance and distribution of the common stock being registered. All amounts are estimated except the SEC registration fee.

SEC registration fee	$	3,801
Accounting fees and expenses	$	10,000
Legal fees and expenses	$	25,000
Printing expenses	$	5,000
Miscellaneous	$	1,199
Total	$	45,000

The expenses set forth above relate solely to the preparation and filing of this Registration Statement and the Company will incur additional expenses in connection with any offering of the securities registered hereunder.

ITEM 15. Indemnification of Officers and Directors.

Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities (including reimbursement for expenses incurred) arising under the Securities Act of 1933. Our restated certificate of incorporation and our amended and restated bylaws provide for indemnification of our directors, officers, employees and other agents to the maximum extent permitted by Delaware law. In addition, we have entered into indemnification agreements with our officers and directors.

ITEM 16. Exhibits.

Exhibit No.	Exhibit Title
5.1**	Opinion of Morgan, Lewis & Bockius LLP
23.1	Consent of Morgan, Lewis & Bockius LLP (included in Exhibit 5.1)
23.2	Consent of Ernst & Young LLP, independent auditors
24.3**	Power of Attorney

** Previously Filed

ITEM 17. Undertakings.

The Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(a) to include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(b) to reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement; and

(c) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that (a) and (b) do not apply if the information required to be included in a post-effective amendment by (a) and (b) is contained in periodic reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement.

(2) That, for purposes of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remains unsold at the termination of the offering.

(4) That, for purposes of determining any liability under the Securities Act of 1933, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered in the registration statement, and the offering of the securities at that time shall be deemed to be the initial bona fide offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all the requirements for filings on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized.

SANGAMO BIOSCIENCES, INC.

Richmond, California
Dated: March 31, 2004

By: /s/ EDWARD O. LANPHIER II

Edward O. Lanphier II
President, Chief Executive Officer and Director

Pursuant to the requirements of the Securities Act of 1933, this Amendment No. 1 to the Registration Statement has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ EDWARD O. LANPHIER II Edward O. Lanphier II	President, Chief Executive Officer and Director (Principal Executive Officer)	March 31, 2004
/s/ GREG S. ZANTE Greg S. Zante	Senior Director, Finance and Administration (Principal Financial and Accounting Officer)	March 31, 2004
/s/ WILLIAM G. GERBER, M.D.* William G. Gerber, M.D.	Director	March 31, 2004
/s/ JON E.M. JACOBY* Jon E.M. Jacoby	Director	March 31, 2004
/s/ JOHN W. LARSON John W. Larson	Director	March 31, 2004
/s/ WILLIAM J. RUTTER, PH.D.* William J. Rutter, Ph.D.	Director	March 31, 2004
/s/ MICHAEL C. WOOD* Michael C. Wood	Director	March 31, 2004

***By Attorney-in-Fact**

INDEX TO EXHIBITS

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24.3**	Power of Attorney

** Previously Filed

QuickLinks

QuickLinks -- Click here to rapidly navigate through this document

Exhibit 23.2

CONSENT OF ERNST & YOUNG LLP, INDEPENDENT AUDITORS

We consent to the reference to our firm under the caption "Experts" and to the use of our report dated January 30, 2004 in Amendment No. 1 to the Registration Statement (Form S-3 No. 333-113062) of Sangamo BioSciences, Inc. related to the sale of common stock and warrants with proceeds of up to $30 million.

/s/ ERNST & YOUNG LLP

Palo Alto, California
March 29, 2004

QuickLinks