Sangamo THERAPEUTICS

Q4 and Full Year 2018 Conference Call

February 28, 2019

Forward Looking Statements

This presentation contains forward-looking statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995, as amended. These forward-looking statements include, but are not limited to, the design of clinical trials and expected timing for release of data; the anticipated clinical development milestones and other potential value drivers in the future; the expected benefits of our collaborations, the expanded capability of Sangamo's technologies; the research and development of novel gene- and cell-based therapies and the application of Sangamo's ZFP technology platform to specific human diseases; successful manufacturing of our product candidates; and the potential of Sangamo's genome editing technology to safely treat genetic diseases. These statements are based upon our current expectations and speak only as of the date hereof. Our actual results may differ materially and adversely from those expressed in any forward-looking statements as a result of various factors and uncertainties. Factors that could cause actual results to differ include, but are not limited to, the dependence on the success of clinical trials of lead programs, the lengthy and uncertain regulatory approval process, uncertainties related to the timing of initiation and completion of clinical trials, whether clinical trial results will validate and support the safety and efficacy of Sangamo's therapeutics, and the reliance on partners and other third-parties to meet their obligations. Further, there can be no assurance that the necessary regulatory approvals will be obtained or that Sangamo and its partners will be able to develop commercially viable gene-based therapeutics. Actual results may differ from those projected in forward-looking statements due to risks and uncertainties that exist in Sangamo's operations. These risks and uncertainties are described more fully in Sangamo's Annual Report on Form 10-K and Quarterly Reports on Form 10-Q as filed with the Securities and Exchange Commission. Forward-looking statements contained in this presentation are made as of the date hereof, and Sangamo undertakes no obligation to update such information except as required under applicable law.

Agenda

- Welcome
- 2018 Review and Recent Highlights
- Clinical Development Update
- Research & Development Update
- Q4 and Full Year 2018 Financial Review

Participants

Sandy Macrae
Chief Executive Officer

Stephane Boissel
EVP, Corporate Strategy

Adrian Woolfson, BM BCh, PhD
EVP, Research & Development

Kathy Yi
Chief Financial Officer

Ed Conner, MD
Chief Medical Officer

McDavid Stilwell
VP, Corp Communications and IR

Corporate Overview and Recent Highlights

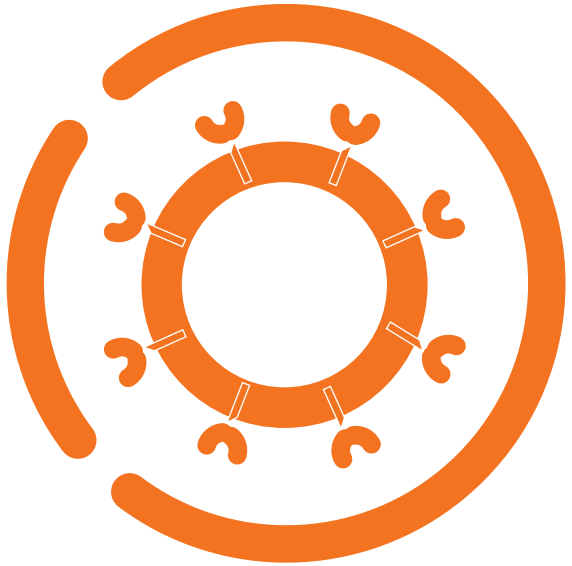
Sangamo THERAPEUTICS

We are committed to translating ground-breaking science into genomic medicines that transform patients' lives

Proprietary genomic medicines pipeline focused on three therapeutic areas

Inherited Metabolic Diseases

Rare Populations



Immunology

Rare + Large Populations

Central Nervous System

Rare + Large Populations

Partnered therapeutic areas

Hematology

Oncology

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Recent accomplishments demonstrate clinical progress and Sangamo's growth into a development organization

- Presented interim data from Phase 1/2 CHAMPIONS and EMPOWERS studies evaluating SB-913 and SB-318 for MPS II and MPS I
- Sangamo believes data from CHAMPIONS and EMPOWERS studies provide complementary evidence supportive of a favorable safety profile and of the activity of ZFN *in vivo* genome editing
- Completed the acquisition of TxCell in the fourth quarter of 2018, positioning Sangamo as a leader in the development of CAR-Tregs
- FDA acceptance of Investigational New Drug (IND) application for ST-920 gene therapy candidate for the treatment of adults with Fabry disease
- Appointed Adrian Woolfson, BM BCh, PhD, as Executive Vice President of Research & Development

Active clinical trials in inherited metabolic diseases and hematology

Therapeutic Area	Research	Preclinical	Phase I/II Clinical	Phase III Registrational	Collaborator
Inherited Metabolic Diseases					
MPS I (SB-318)					
MPS II (SB-913)					
Hematology					
Hemophilia A (SB-525)					Pfizer
Hemophilia B (SB-FIX)					
Hemoglobinopathies (ST-400, BIVV003)					SANOFI

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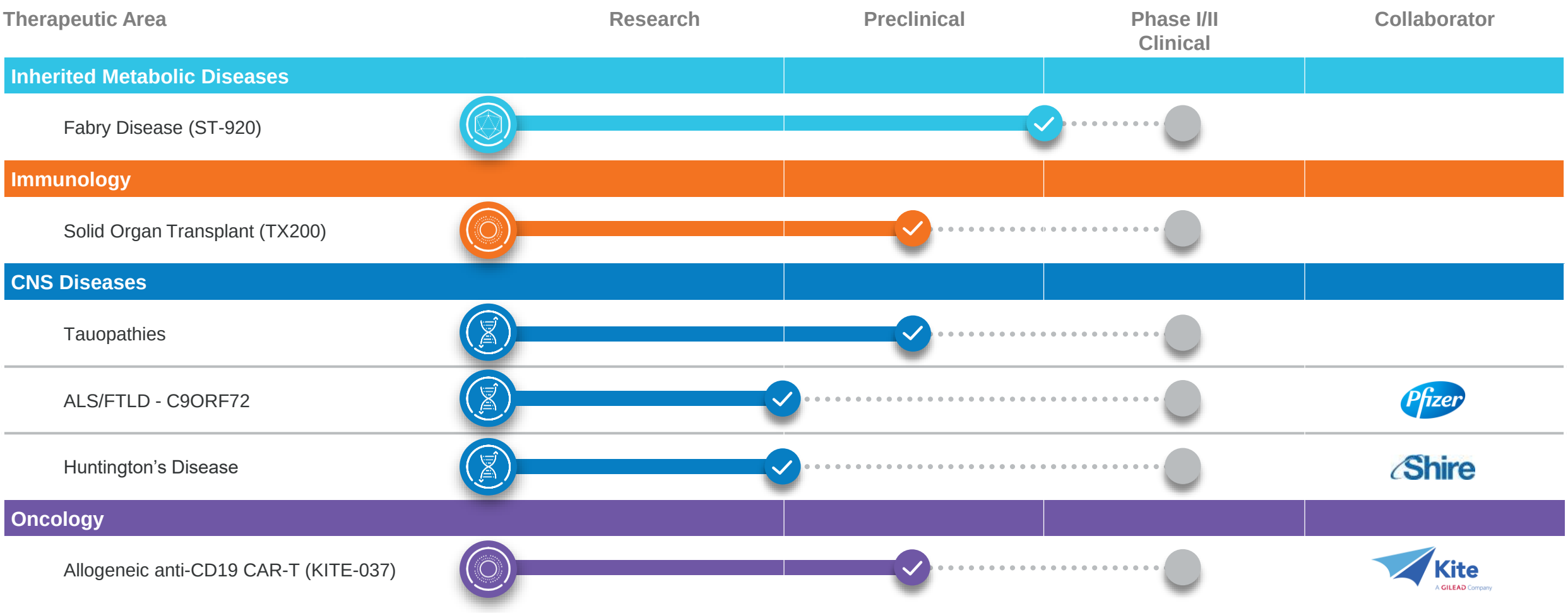
Robust preclinical genomic medicine pipeline



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Clinical Development

- SB-913: MPS II
- SB-318: MPS I
- SB-FIX: Hemophilia B
- SB-525: Hemophilia A
- ST-400: Beta-thalassemia

SB-913, *in vivo* genome editing for MPS II

Phase I/II Open Label Study

Dose Escalation Complete

Cohort 1	Cohort 2	Cohort 3
5e12 vg/kg	1e13 vg/kg	5e13 vg/kg

Adult Cohort Expansion Complete

5e13 vg/kg

Clinical Readouts and Updates

- Interim results from cohorts 1-3 presented at WORLD*Symposium* 2019

Next Steps

- Longer-term safety and biochemical measurements including from expanded high dose cohort
- High dose liver biopsy analyses
- Complete ERT withdrawal
- Initiate 2nd generation ZFN study

FDA
- Orphan Drug
- Fast Track
- Rare Pediatric Disease

- Orphan Medicinal Product

IND open

CTA granted

Goals

Patient safety | Reduction in GAGs | IDS enzyme production | ERT withdrawal

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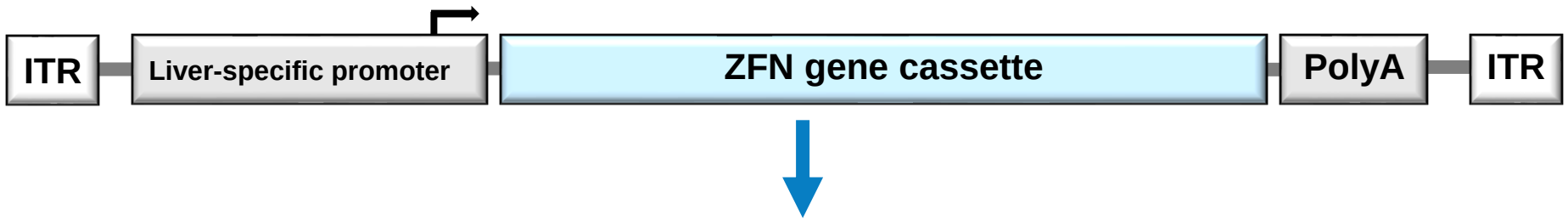
Second-generation ZFN enhancements for improved *in vivo* genome editing

Modifications to the AAV-ZFN expression construct resulting in increased ZFN activity

Efficiency



Transgene Modifications

- Addition of a 5'UTR enhances translation
- Addition of an N-terminal peptide increases expression levels
- Addition of an expression enhancer increases ZFN mRNA stability and translation

Inclusion of transcriptional elements each independently lead to an increase in ZFN activity, resulting in overall greater ZFN protein expression

SB-318, *in vivo* genome editing for MPS I

Phase I/II Open Label Study

Dose Escalation Complete

Cohort 1	Cohort 2	Cohort 3
5e12 vg/kg	1e13 vg/kg	5e13 vg/kg

Clinical Readouts and Updates

- Interim results from first 3 patients presented at WORLD*Symposium* 2019

Next steps

- Longer-term safety and biochemical measurements
- Liver biopsy analyses
- ERT withdrawal

- Orphan Drug
- Fast Track
- Rare Pediatric Disease

- Orphan Medicinal Product

IND open

CTA granted

Goals

Patient safety | Reduction in GAGs | IDS enzyme production | ERT withdrawal

SB-FIX, *in vivo* genome editing for hemophilia B

Phase I/II Open Label Study

Dose Escalation Ongoing

Cohort 1	Cohort 2	Cohort 3
5e12 vg/kg	1e13 vg/kg	5e13 vg/kg

October SMC Review and Recommendations

Begin Adult Enrollment at the 5e13 vg/kg Dose Cohort

Next steps

- Complete 5e13 vg/kg cohort enrollment
- SMC review and recommendation

- Orphan Drug
- Fast Track

- Orphan Medicinal Product

IND open

CTA granted

Goals

Patient safety

FIX activity

Reduction of bleeding events

Reduction of factor replacement use

SB-525, gene therapy for hemophilia A

Phase I/II Open Label Study

Dose Escalation Ongoing

Cohort 1 | Cohort 2 | Cohort 3 | Cohort 4

Clinical Updates

- Completed cohort 4 enrollment

Next steps

- SMC review and recommendation

- Orphan Drug
- Fast Track

- Orphan Medicinal Product

IND open

Goals

Patient safety | FVIII activity | Reduction of bleeding events | Reduction of factor replacement use

ST-400, gene-edited cell therapy for beta thalassemia

Phase I/II Open Label Study

Patient Enrollment Ongoing

Potential Advantages

- Leverages naturally-occurring, protective mechanism to increase fetal-hemoglobin to reduce or potentially eliminate blood transfusions
- Highly efficient, precise gene editing
- Non-viral delivery of ZFNs

Next steps

- Continue patient enrollment

IND open

Goals

- Patient safety
- Successful engraftment
- Fetal hemoglobin (HbF) production
- Reduction / elimination of transfusions

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Research & Development

CAR-Tregs

CAR-Tregs have the potential to generate antigen and tissue specific cell therapy products for immunology

Cell Product Characteristics

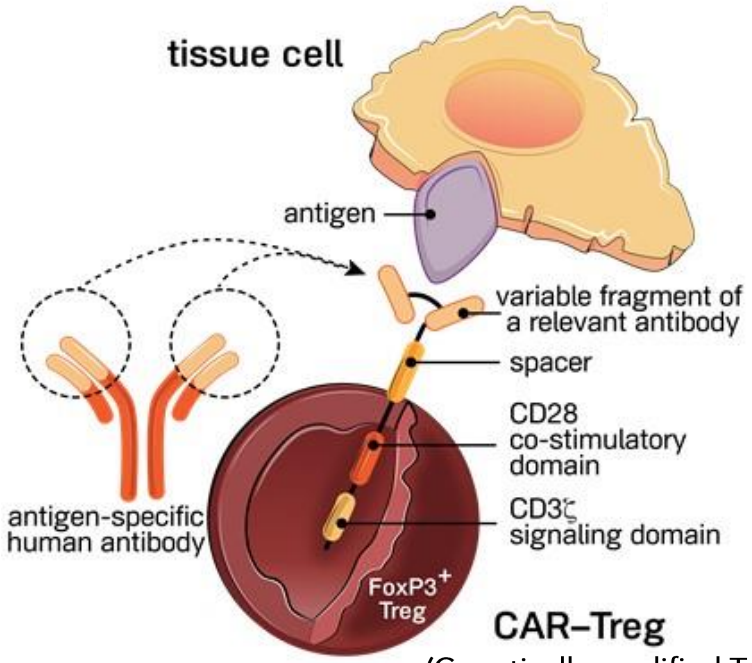
Engineered CAR-Tregs

Antigen localized: tissue-specific activity

Antigen activated: better controlled cell product and dosing

Robust and scalable processes

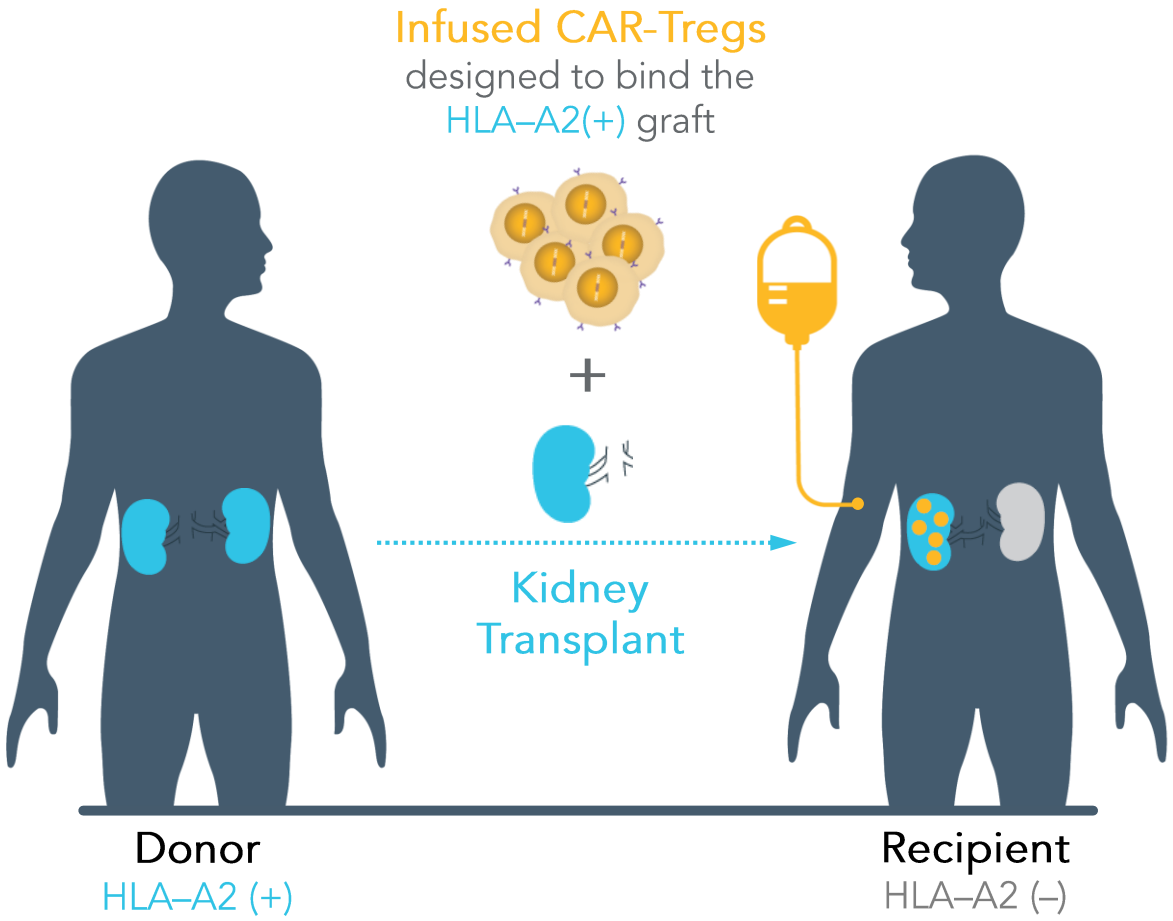
Antigen-specific CAR-Treg



CAR–Treg
(Genetically modified Treg)

TX200: HLA-A2 CAR-Treg for solid organ transplant

Induction of site-specific immune tolerance



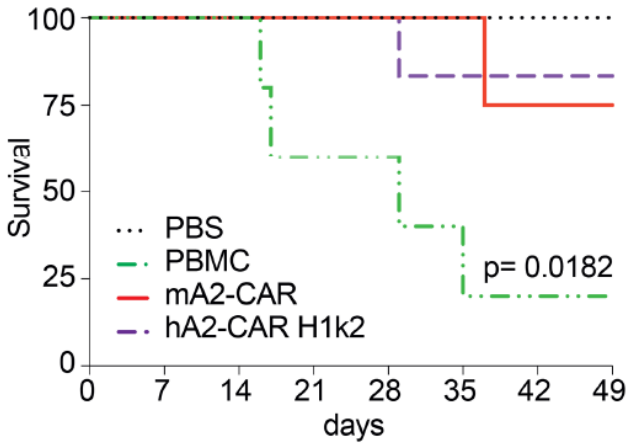
- HLA-A2 antigen on graft is recognized by CAR-Treg cells
- Activated CAR-Treg cells exert **site specific** suppressive function

Objective: achieve tolerance and long-term protection of graft

HLA-A2 CAR-Tregs achieve precise and durable targeting of skin graft in a mouse model

GvHD transplantation model
Survival rate

HLA-A2 CAR-Tregs were able to suppress rejection in both a graft-versus-host disease (GvHD) model and a skin allograft model

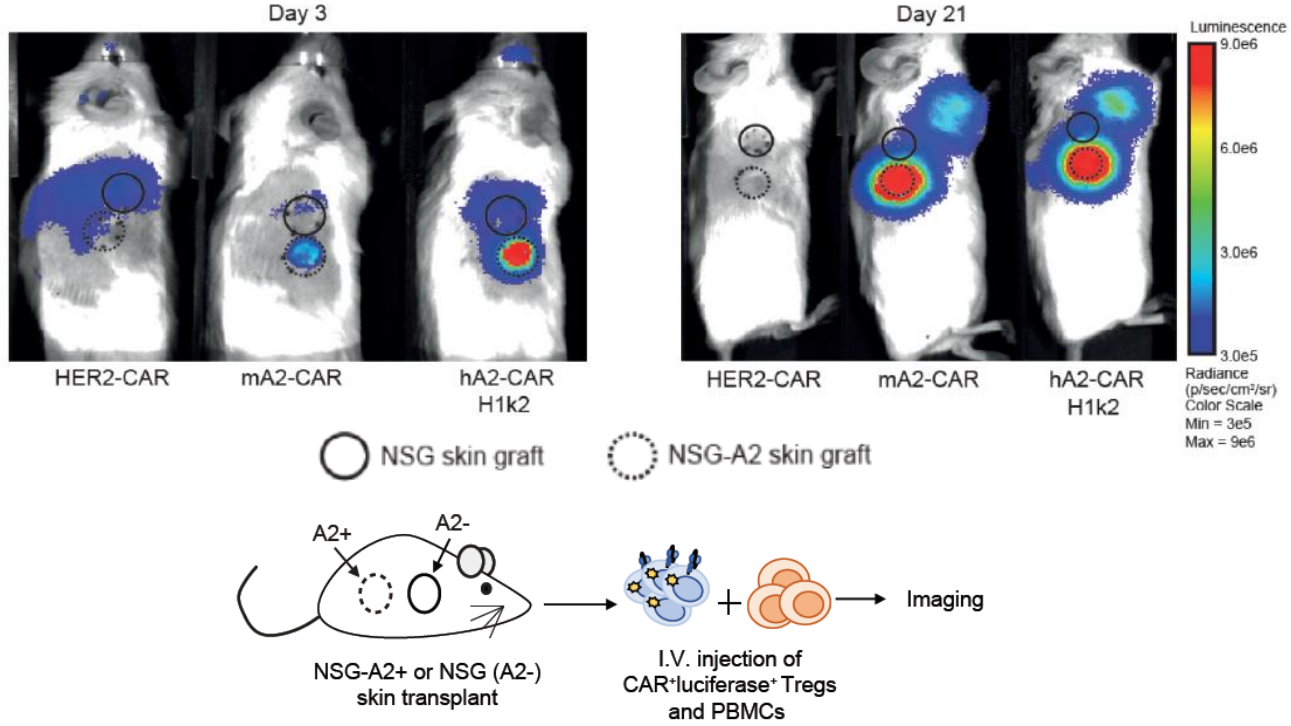


HER2-CAR: CAR-Tregs w/ an irrelevant CAR (HER2)
mA2-CAR: murine HLA-A2 CAR-Tregs
hA2-CAR: humanized HLA-A2 CAR-Tregs

Skin transplant model
Bioluminescence imaging

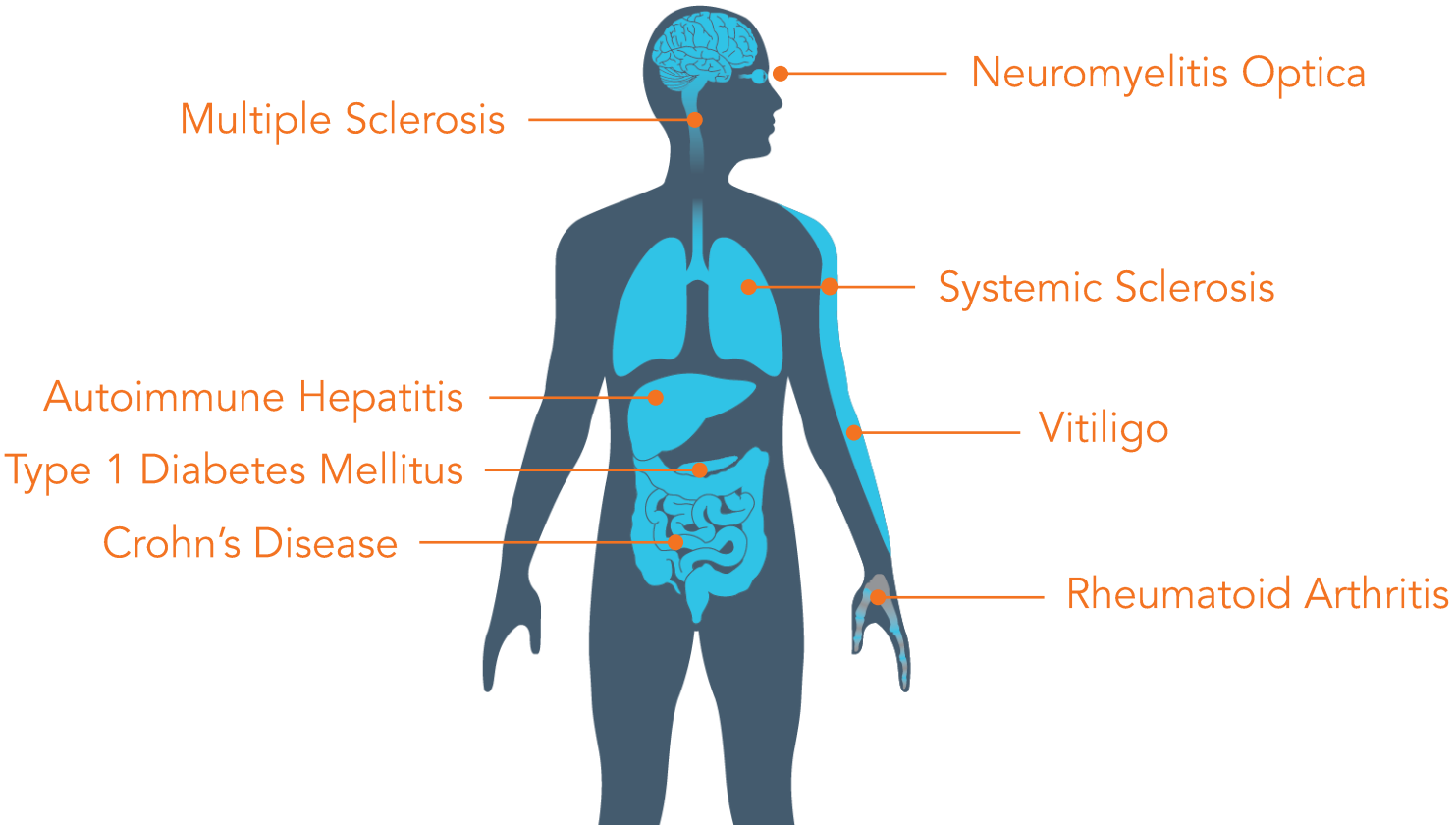
Rapid migration of HLA-A2 CAR-Tregs to HLA-A2 allograft

Persistence in HLA-A2 allograft and eventual migration to draining lymph nodes



Systematic testing and specificity mapping of alloantigen-specific chimeric antigen receptors in T regulatory cells. Dawson NA, Lamarche C, Hoeppli RE, Bergqvist P, Fung V, McIver E, Huang Q, Gillies J, Speck M, Orban PC, Bush JW, Mojibian M, Levings MK, JCI Insight 2019, doi: 10.1172/jci.insight.123672 [Epub ahead of print].

Market opportunity for Tregs holds significant potential in autoimmune diseases



Several autoimmune diseases with large patient populations and high unmet need present significant market opportunities for CAR-Treg cell therapies

Financial Review

Q4 / FY 2018 financial results
2019 financial guidance

Q4 and full year 2018 financial results and 2019 guidance

	Q4 2018	Q4 2017	FY 2018
Revenues	$in MM, except per share data		
	26.8	13.1	84.5
Operating Expenses			
R&D	33.3	19.4	114.9
G&A	14.4	7.5	46.7
Total Operating Expenses	47.6	26.8	161.6
Operating Loss	(20.8)	(13.8)	(77.2)
Net Loss	(18.7)	(13.1)	(68.3)
Net Loss per Share	($0.18)	($0.15)	($0.70)
Cash Position			
Ending Cash Balance	$401M	$245M	

2019 Guidance

Operating expenses:
$210-220M

Cash runway:
at least
2 years

Closing Remarks

Why to invest in Sangamo in 2019

- Leading genomic medicine company active in gene editing, gene therapy, cell therapy and gene regulation
- Precise, efficient and specific gene editing technology (ZFNs) backed by a robust patent estate
- Broad portfolio of rare and large indications across inherited metabolic diseases, immunology, CNS, hematology and oncology
- Flow of clinical data readouts in 2019 and 2020 following enrollment progress of last twelve months
- Strong balance sheet and 4 validating biopharma partnerships (Kite, Pfizer, Sanofi, Shire)

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Thank you.