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Sangamo Presents T Cell Engineering Capabilities at Immuno-Oncology Summit

RICHMOND, Calif., Aug. 31, 2017 /PRNewswire/ -- Sangamo Therapeutics (Nasdaq: SGMO) this afternoon is presenting preclinical data demonstrating the Company's engineering capabilities in T cell genome editing using zinc finger nucleases (ZFNs). Gary Lee, Ph.D., Senior Director, Genome Editing at Sangamo, is delivering the presentation, "Engineering T Cells for Cancer Therapeutics," at the Immuno-Oncology Summit in Boston.

"We believe that next generation cellular immuno-oncology treatments will be allogeneic, 'off-the-shelf', genome edited T cell therapies," said Dr. Lee. "Developing allogeneic T cell therapies requires engineering with genome editing technology in order to 'knock-out' the proteins that may cause the body to reject the treatment and to 'knock-in' the targeting moiety that enables the T cell to find and destroy a particular cancer cell. We believe the higher cell modification efficiency and simultaneous knock-out of multiple endogenous genes via ZFN-mediated genome editing have the potential to provide more consistent and better regulated TCR/CAR expression and activity, improved anti-tumor activity and durability, as well as a stronger safety profile."

Dr. Lee's presentation highlights Sangamo's cell therapy expertise and provides data from the Company's recent preclinical research toward the development of allogeneic T cell immunotherapies utilizing ZFN editing techniques:

- Elimination of endogenous T cell receptor (TCR) expression by knock-out of the TCR alpha constant locus (TRAC) with greater than 90% efficiency
- Elimination of human leukocyte antigen (HLA) Class I proteins by knock-out of β_2-microglobulin (B2M) with greater than 90% efficiency
- Co-delivery double knock-out of TRAC and B2M with greater than 90% efficiency
- Targeted integration of a green fluorescent protein (GFP) expression cassette into either the TRAC or B2M locus with ~90% efficiency with double knock-out of TCR and HLA Class I
- CD19 chimeric antigen receptor (CAR) integrated into either the TRAC or B2M locus demonstrated strong antigen specific killing with a clear dose response
- No evidence of off-target cleavage in human primary T cells

Through the company's legacy T cell genome editing programs, Sangamo has accumulated robust clinical expertise in therapeutic T cell development and manufacturing of clinical grade materials. In approximately 100 HIV patients treated with ZFN-edited T cells, Sangamo has demonstrated persistent engraftment and established a strong safety profile for the duration of observation (3 years post infusion).

"Sangamo is uniquely positioned in the emerging field of immuno-oncology with our ZFN gene editing platform, which we believe is ideally suited for allogeneic or autologous approaches, and with our *ex vivo* clinical and manufacturing experience in cell engineering and development," said Dr. Sandy Macrae, CEO of Sangamo. "Our strategy in oncology is to advance our T cell editing platform in collaboration with partners with the appropriate development and commercialization expertise."

Dr. Lee's slides are available on the Presentations + Publications page of the technology section of Sangamo's website.

About Sangamo's Zinc Finger Nucleases
Sangamo's proprietary genome editing technology is based on a naturally occurring class of proteins called zinc finger DNA-binding proteins (ZFPs) which recognize and bind to specific sequences of DNA. Sangamo can engineer these naturally occurring ZFPs to bind to virtually any chosen DNA sequence. By combining ZFPs with nucleases (DNA cutting enzymes) to create zinc finger nucleases (ZFNs), Sangamo can harness the powerful targeting capabilities of zinc fingers to edit the human genome, specifically knocking out a DNA sequence or adding a new gene in a precise location.

In 2017, Sangamo scientists have reported on recent advancements in design and engineering which have enhanced the profile of ZFNs across three important criteria for the development of therapeutic genome editing: Precision, Efficiency and Specificity. With thousands of zinc finger modules in the Sangamo library and an array of linkers attaching the zinc fingers and the FOK1 nuclease domain, Sangamo is able to assemble highly specific ZFN pairs for virtually any chosen target site. For any given 20-base pair window in the genome, Sangamo has on average 450 functionally distinct ZFN modules to evaluate. Sangamo believes that the very high design density of the Company's ZFN library has operational advantages in choosing a final ZFN pair with an optimal profile to advance into potential clinical development.

About Sangamo Therapeutics
Sangamo Therapeutics, Inc. is focused on translating ground-breaking science into genomic therapies that transform patients' lives using the Company's industry leading platform technologies in genome editing, gene therapy, gene regulation and cell therapy. For more information about Sangamo, visit www.sangamo.com.

Forward Looking Statements
This press release contains forward-looking statements, including, but not limited to, statements related to Sangamo's expectations for cellular immuno-oncology treatments, the clinical and therapeutic potential of Sangamo's ZFN gene editing platform, Sangamo's strategy to advance its T cell editing platform in collaboration with partners, and other statements that are not historical facts. These forward-looking statements are based on Sangamo's current plans, objectives, estimates, expectations and intentions and

inherently involve significant risks and uncertainties. Actual results and the timing of events could differ materially from those anticipated in such forward-looking statements as a result of these risks and uncertainties, which include, without limitation, risks and uncertainties associated with: gene therapy product candidate development and the inherent uncertainty of clinical success, including the risks that Sangamo and/or its collaborators may encounter unanticipated toxicity or adverse events or fail to demonstrate efficacy in clinical development; Sangamo's substantial dependence on the clinical success of its lead therapeutic programs; the initiation, enrollment and completion of the stages of its clinical trials; technological challenges; the lengthy and uncertain regulatory approval process; Sangamo's ability to develop commercially viable products; technological developments by its competitors and others in the gene therapy and/or cellular immuno-oncology treatment fields; Sangamo's dependence on collaborations to further the development of its technology platforms, including Sangamo's potential inability to successfully enter into new collaborations with third parties on acceptable terms, or at all, in order to advance its T cell editing platform. A more detailed discussion of these and other risks and uncertainties may be found under the caption "Risk Factors" and elsewhere in Sangamo's SEC filings and reports, including Sangamo's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017 and future filings and reports by Sangamo. Sangamo assumes no obligation to update the forward-looking information contained in this press release.

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