



## Sensei Biotherapeutics Presents First Preclinical Data on SNS-723 CAR-T and Long-Term Results on SNS-301 Data at the 2019 American Association for Cancer Research (AACR) Annual Meeting

*-Multiple SNS-723 CAR constructs demonstrated significant expression of ASPH-specific CARs on T-cells, dose-dependent cell killing, and cytokine responses*

*-Dose-dependent and durable ASPH-specific immune responses observed in patients dosed with SNS-301, consistent with earlier findings*

**GAITHERSBURG, MD – April 1, 2019** – Sensei Biotherapeutics, Inc., a clinical-stage biopharmaceutical company developing precision immuno-oncology therapies, today announced new data from two programs targeting a novel tumor specific embryonic antigen, human aspartate  $\beta$ -hydroxylase (ASPH), including preclinical data on SNS-723, a first-in-class CAR-T cell therapy demonstrating effective killing of tumor cells by a series of ASPH-specific CAR-Ts as well as additional data from its Phase 1 study on the long-term effects of SNS-301, a first-in-class cancer immunotherapy demonstrating that all patients experienced dose-dependent and durable ASPH-specific immune responses. These data were presented in two poster presentations at the American Association for Cancer Research (AACR) Annual Meeting in Atlanta, Georgia from March 29 - April 3, 2019.

“We are excited to share these first preclinical data for SNS-723,” said Hossein Ghanbari, Ph.D., Chief Scientific Officer of Sensei Biotherapeutics. “This novel CAR-T is designed to elicit tumor cell destruction where ASPH is expressed, which includes both solid tumors and hematological malignancies. Given that ASPH is not found on the surface of normal tissues at any detectable levels, we believe SNS-723 offers a substantial opportunity to improve on the safety profile of today’s approved cell therapies.”

“These long-term data from our phase 1 study of SNS-301 are consistent with our earlier findings of strong dose-dependent ASPH-specific immunogenicity in patients and provide additional insights into our Phase 2 dosing strategy,” said Ildiko Csiki, M.D., Ph.D., Chief Medical Officer of Sensei Biotherapeutics. “Given the promise of targeting ASPH as a new strategy for treating cancer, we remain focused on initiating Phase 2 trials of SNS-301 in various hematological malignancies and solid tumors in 2019.”

In a poster titled “**CAR-T Cell Therapies Targeting Aspartyl  $\beta$ -hydroxylase (ASPH)**,” Sensei researchers examined multiple ASPH-specific CAR constructs for CAR expression, cell-killing efficacy and cytokine response. Key SNS-723 data (poster #2306) highlights included:

- Significant expression of three different evaluated ASPH-specific CARs was observed in human T-cells.
- Dose-dependent cell-killing of ASPH-expressing H460 lung carcinoma cells by two of the ASPH-specific CAR constructs was observed concomitant with cytokine release. In contrast, untransduced T-cells or T-cells transduced to express a non-relevant CAR did not kill target cells or activate cytokine production.
- CARs binding two different, non-overlapping epitopes on ASPH both displayed cell killing efficacy.

In a poster titled “**Long-term Immunogenicity Results from a First-in-human Study Evaluating the Anti-ASPH Cancer Vaccine, SNS-301**,” Sensei researchers examined both short- and long-term immune responses to SNS-301. Previous data from the Phase 1 clinical trial of SNS-301 were presented in 2018,



demonstrating rapid and significant antigen-specific B-cell and T-cell responses induced by SNS-301. In the extension of the Phase 1 study, the 12 enrolled patients received between 8 and 23 doses of the vaccine delivered via an intradermal injection every 21 days. The additional key SNS-301 data (poster #1454) highlights included:

- All patients continued to experience long-term, dose-dependent and durable ASPH-specific immune responses, including B-cell, T-cell, and antibody responses.
- A fluctuation in the peak immune responses following the first six cycles was seen, suggesting the possibility of immune fatigue and a potential benefit from increased spacing between boosting doses after the first 6 cycles.
- Anti-phage antibody responses were generally much lower at the low- and mid-doses than the high dose. Based on the ratio of ASPH-specific immune response to anti-phage immune response, the mid-dose is the recommended Phase 2 dose.

Based on the data presented today, Sensei plans to initiate multiple multi-site Phase 2 clinical trials in mid-2019 to evaluate the immunogenicity and preliminary clinical activity of SNS-301 in various malignancies. Sensei also plans to continue preclinical development and begin IND-enabling studies for SNS-723 in the second half of 2019.

#### **About SNS-723**

SNS-723 is a first-in-class CAR-T cell therapy that is currently in preclinical development targeting human aspartate  $\beta$ -hydroxylase (ASPH), a cell surface enzyme that is normally expressed during fetal development. The recognition domain of the CAR is the scFv portion of a high affinity, fully human, anti-ASPH antibody. SNS-723 is designed to overcome one of the major hurdles in T-cell therapy, targeting T-cells to tumors in the absence of non-tolerable and/or off-target toxicities to essential tissues and organs. Experiments to further characterize ASPH-targeted CAR-T cells are ongoing with the goal of moving these promising therapeutics into clinic.

#### **About SNS-301**

SNS-301 is a first-in-class cancer immunotherapy targeting human aspartate  $\beta$ -hydroxylase (ASPH), a cell surface enzyme that is normally expressed during fetal development. Following fetal development, the protein is no longer expressed. Expression of ASPH is uniquely upregulated in more than 20 different cancer types and promotes cancer cell growth, cell motility and invasiveness. ASPH expression levels in various tumors are inversely correlated with tumor resistance and patient survival. Through enhanced antigen presentation and other engineered immunotherapeutic features, SNS-301 is designed to overcome self-tolerance and induce robust and durable ASPH-specific humoral and cellular immune responses. SNS-301 is paired with a companion diagnostic to select antigen-positive patients and is delivered intradermally for ease of administration.

#### **About Sensei Biotherapeutics**

Sensei Biotherapeutics is a clinical-stage biopharmaceutical company developing precision immuno-oncology therapies to transform the cancer treatment landscape. The company is using its proprietary drug discovery platform, called SPIRIT, to discover and develop both vaccines and T-cell therapies, including SNS-301, its clinical stage cancer vaccine, and SNS-723, its cell therapy program in preclinical development for solid tumors and hematological cancers. These programs target ASPH, a novel embryonic antigen. Sensei's precision medicine approach in immuno-oncology includes the use of companion diagnostics to select patients who are most likely to respond to its tumor-specific antigen therapies. Sensei Biotherapeutics is located in Gaithersburg, MD. For more information, please visit [www.senseibio.com](http://www.senseibio.com).



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