Sensei Biotherapeutics Announces New Preclinical Data Demonstrating Favorable Pharmacokinetic and Immunologic Effects of SNS-101, a pH-selective VISTA-blocking Antibody

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BOSTON, Mass., Aug. 31, 2022 (GLOBE NEWSWIRE) -- Sensei Biotherapeutics, Inc. (NASDAQ: SNSE), an immuno-oncology company focused on the discovery and development of next-generation therapeutics for cancer, today reported preliminary preclinical data from mouse and non-human primate studies of SNS-101, a monoclonal antibody targeting the immune checkpoint VISTA (V-domain Ig suppressor of T cell activation).

“These preclinical data demonstrate that our conditionally active, pH-selective antibody successfully overcomes pharmacokinetic issues associated with targeting the VISTA immune checkpoint, including target-mediated drug disposition and cytokine release syndrome, in these models. The data also differentiate SNS-101 from non-selective antibodies by showing expansion of naïve and memory T cell phenotypes *in vivo*, as well as significant enhancement of anti-tumor effects in combination with anti-PD-1 antibodies as compared to anti-PD-1 antibodies alone,” said Robert Pierce, M.D., Chief R&D Officer. “These results represent important progress for our SNS-101 program and a potential breakthrough for the field of VISTA inhibition as a novel therapeutic approach in multiple solid tumor indications. We are thrilled with these preliminary results and the potential of SNS-101 to provide a new standard of care to patients in need of innovative treatment options.”

In a whole-blood assay at neutral pH, a clinical-stage, pH-independent VISTA antibody induced release of pro-inflammatory cytokines, such as IFNy and TNF, at substantially higher levels of concentration compared with Sensei’s pH-selective VISTA antibody SNS-101, across doses ranging from 1 g/mL to 100 g/mL. These preclinical data support the Company’s hypothesis that pH-driven, conditional binding of SNS-101 could be an effective mechanism for preventing the on-target, off-tumor VISTA binding that has been shown to drive cytokine release syndrome in human patients.

SNS-101 also displayed a favorable pharmacokinetic profile in non-human primates compared with a clinical-stage, pH-independent VISTA antibody. Whereas the pH-independent antibody exhibited target-mediated drug disposition and clearance from the blood within hours of administration due to interaction with VISTA-positive immune cells, the SNS-101 concentration declined linearly with a median half-life of approximately three weeks. These data strongly support the Company’s belief that SNS-101’s selective binding to VISTA at low pH, like that found in the tumor microenvironment, has potential to mitigate the pharmacokinetic and safety issues associated with off-tumor binding and unregulated activity.

Finally, experiments in a mouse tumor model demonstrated a significant increase in the production of anti-tumor $CD8^+$ T cells among animals treated with a combination of SNS-101 and anti-PD-1 antibodies compared with PD-1 alone, which correlated with tumor growth inhibition. Because $CD8^+$ T cells are essential tumor-destroying immune cells, these data provide encouraging evidence that this therapeutic combination has potential to generate a highly effective anti-tumor response in patients.

IND-enabling studies are underway to evaluate the potential of SNS-101 as a novel treatment for solid cancers, both as a monotherapy and in combination with the blockade of other immune checkpoints. The Company plans to file an IND during the first half of 2023. Additional information from these studies can be found in the Company’s corporate presentation, available on the Company’s website, and in its SEC filings. More detailed findings will be published at upcoming scientific conferences.

About Sensei Biotherapeutics
Sensei Biotherapeutics (NASDAQ: SNSE) is an immuno-oncology company focused on the discovery and development of next generation therapeutics for cancer. Sensei has designed two unique approaches to develop highly selective therapeutics – its TMAb™ (Tumor Microenvironment Activated biologics) platform, which disables checkpoints and other immunosuppressive signals in the tumor microenvironment to unleash existing T cells against tumors, and the ImmunoPhage™ platform, which trains new T cells to recognize and kill malignant cells. Using its TMAb platform, the company is developing SNS-101, a fully human antibody designed to block the V-domain Ig suppressor of T cell activation (VISTA) checkpoint selectively only within the low pH tumor microenvironment, where VISTA acts as a suppressor of T cells by binding the receptor PSGL-1. The company is also using its platforms to develop other preclinical programs targeting multiple solid tumor indications. For more information, please visit www.senseibio.com, and follow the company on Twitter @SenseiBio and LinkedIn.

Cautionary Note Regarding Forward-Looking Statements
Any statements contained in this press release that do not describe historical facts may constitute forward-looking statements as that term is defined in the Private Securities Litigation Reform Act of 1995. These statements may be identified by words and phrases such as “believe”, “designed to,” “expect”, “may”, “plan”, “potential”, “will”, and similar expressions, and are based on Sensei’s current beliefs and expectations. These forward-looking statements include expectations regarding the development and potential therapeutic benefits of Sensei’s product candidates and platforms, including SNS-101; the expected safety profile of Sensei’s product candidates, including SNS-101; and the potential benefits of SNS-101, including the potential to overcome pharmacokinetic and safety issues associated with targeting the VISTA immune checkpoint, including target-mediated drug disposition and cytokine release syndrome, the potential to expand naïve and memory T cell phenotypes, as well as the potential to enhance anti-tumor effects in combination with anti-PD-1 antibodies. These statements involve risks and uncertainties that could cause actual results to differ materially from those

reflected in such statements. Risks and uncertainties that may cause actual results to differ materially include uncertainties inherent in the development of therapeutic product candidates, such as the risk that any one or more of Sensei's product candidates will not be successfully developed or commercialized; the risk of delay or cessation of any planned clinical trials of Sensei's product candidates; the risk that prior results, such as signals of safety, activity or durability of effect, observed from preclinical studies, including the preclinical studies described in this press release, will not be replicated or will not continue in ongoing or future studies or clinical trials involving Sensei's product candidates; the risk that Sensei's product candidates or procedures in connection with the administration thereof will not have the safety or efficacy profile that we anticipate; risks associated with Sensei's dependence on third-party suppliers and manufacturers, including sole source suppliers, over which we may not always have full control; risks regarding the accuracy of our estimates of expenses, capital requirements and needs for additional financing; and other risks and uncertainties that are described in Sensei's Annual Report on Form 10-K filed with the U.S. Securities and Exchange Commission (SEC) on March 15, 2022 and Sensei's other Periodic Reports filed with the SEC. Any forward-looking statements speak only as of the date of this press release and are based on information available to Sensei as of the date of this release, and Sensei assumes no obligation to, and does not intend to, update any forward-looking statements, whether as a result of new information, future events or otherwise.

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