Sutro Antibody Effectively Targets CD74 in Lymphoma & Multiple Myeloma Preclinical Studies

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Results Presented at ASH are a Promising Sign as Company Prepares for STRO-001 Phase 1 Trial

SOUTH SAN FRANCISCO, December 12, 2017 — Two studies presented yesterday at the American Society of Hematology's annual meeting in Atlanta showed frequent expression of CD74, a cell-surface protein in hematologic B-cell malignancies, in both heavily-pretreated and never-treated multiple myeloma and in three major types of non-Hodgkin's lymphoma. The studies were performed using the unconjugated antibody from STRO-001, a CD74-targeting antibody drug conjugate developed by Sutro Biopharma.

Additionally, STRO-001 demonstrated potent in vitro cytotoxicity and in vivo antitumor activity in multiple B-cell tumor cell lines and xenograft models.

Sutro plans to submit an investigational new drug application by the end of 2017 and to launch a Phase 1 clinical trial in the first quarter of 2018 to evaluate the safety and preliminary efficacy of STRO-001 in patients with multiple myeloma and aggressive and indolent, or slow-growing, lymphomas.

Both of the studies presented yesterday used immunohistochemistry to measure CD74 expression by examining the Sutro antibody's CD74-binding capacity in tissue samples from patients with multiple myeloma and non-Hodgkin's lymphoma.

In the first study, Sutro's research collaborators, led by Dr. Arun Wiita , an assistant professor of pathology and laboratory medicine at the University of California at San Francisco, examined bone marrow samples from multiple myeloma patients and found that the Sutro antibody detected CD74 expression in 35 of the 36 samples, including specimens from patients who were treatment-naïve and patients who had been heavily pretreated with chemotherapy and stem cell transplantation. CD74 expression levels were determined to be similar in samples from both newly-diagnosed as well as relapsed or refractory patients. Two pathologists blinded to the patients' clinical histories and pathology results independently reviewed the specimens.

In the same poster presentation at the ASH meeting, Sutro also presented data showing that STRO-001 demonstrates potent in vitro cytotoxicity in four multiple myeloma cell lines and reduces tumor burden in two disseminated xenograft models, including prolongation of survival in the MM.1S model.

In the second study, Sutro's research collaborators, led by Dr. Yaso Natkunam professor of pathology and director of hematopathology at Stanford University School of Medicine, examined human tissue samples of non-Hodgkin's lymphoma and found that CD74 was highly-expressed in most samples from patients with diffuse large B-cell lymphoma (135 out of 140, or 96%), follicular lymphoma (148/151, 98%) and mantle cell lymphoma (19/21, 91%).

In the same oral presentation, Sutro discussed data showing that STRO-001 exhibits potent in vitro cytotoxicity in multiple lymphoma cell lines and anti-tumor activity in germinal center B-cell–like diffuse large B-cell lymphoma, activated B-cell–like diffuse large B-cell lymphoma and mantle cell lymphoma xenograft models. STRO-001 prolonged survival in the disseminated Mino mantle cell lymphoma model.

“There’s a critical need for new, highly-targeted therapy with better tolerability for both multiple myeloma and non-Hodgkin’s lymphoma,” Sutro CEO Bill Newell observed.

“Based on these findings, we anticipate that STRO-001 will be effective in initial clinical trials with multiple myeloma patients who have received varying levels of treatment, and in non-Hodgkin’s lymphoma patients with both aggressive and indolent, or slow-growing, forms of the disease.”

Building a Better ADC

“STRO-001 was developed with Sutro’s proprietary cell-free protein synthesis and site-specific conjugation platforms, which facilitate multiple rounds of antibody and ADC optimization,” said Dr. Arturo Molina, a medical oncologist and Sutro’s Chief Medical Officer.

“Sutro’s XpressCF+™ platform enables us to produce novel ADCs that directly target cancer cells with a homogeneous payload, thus delivering the optimum dose of cytotoxin to the tumor every time,” Dr. Molina added.

Unlike conventional cell-based expression systems, Sutro’s technology isolates a cell’s protein production machinery into a cell-free extract, XtractCF™, which includes all the necessary biochemical components for energy production, transcription and translation to generate aglycosylated homogeneous antibodies.

The XpressCF+™ platform allows the incorporation of non-natural amino acids into specific positions on the generated antibody, allowing for site-specific conjugation of cytotoxins with a linker and warhead to enable consistent, stable, well-defined pinpoint placement of STRO-001’s toxic payload. By contrast, many earlier, first-generation ADCs have toxic warheads attached at varying positions, resulting in products with unpredictable and sub-optimal pharmacologic properties, stability and efficacy.

Sutro’s technology enables the company to iteratively discover and test molecules in a rapid cycle of weeks rather than months to rapidly identify the optimal molecule designed for safety and potency.

Sutro’s manufacturing center in San Carlos, California, the world’s only cGMP cell-free manufacturing facility, is built to maximize the speed and efficiency of cell-free extract and protein production. The cell-free extract is manufactured by a multi-day continuous process producing extract for large scale XpressCF™ and XpressCF+™ reactions.

This past October, Sutro received a manufacturing milestone payment from Celgene for completing production of STRO-001.

About Sutro Biopharma

Sutro Biopharma, located in South San Francisco, has pioneered a compelling and unique way of discovering, developing and manufacturing therapeutics. Sutro’s focus is primarily next generation

cancer therapeutics — antibody drug conjugates, or ADCs, and bispecific antibodies.

Unconstrained by traditional methods of cell-based discovery, Sutro can design and develop targeted medicines by innovating outside the constraints of the cell.

Sutro's approach to discovery, without the cell, is also transcending the limitations of biologics manufacturing. Sutro's state-of- the-art manufacturing facility confers an important competitive advantage as Sutro heads into human clinical trials in 2018. In addition to developing its own oncology pipeline, Sutro Biopharma is collaborating with select pharmaceutical and biotech companies to discover and develop novel, next generation therapeutics. As the pace of clinical development accelerates, Sutro and its partners are demonstrating a more efficient approach to killing tumors without harming healthy cells.

Follow Sutro on Twitter, @Sutrobio, and at www.sutrobio.com to learn more about our passion for changing the future of oncology.

Media Contacts

David Schull
Russo Partners
(212) 845-4271
david.schull@russopartnersllc.com

Amiad Finkelthal
Russo Partners
(646) 942-5626
(917) 217-1838 mobile
amiad.finkelthal@russopartnersllc.com