April 27, 2020

Sutro Biopharma Announces Encouraging Interim Phase 1 Clinical Data for a Dose Escalation Study of STRO-002 Antibody-Drug Conjugate in Ovarian Cancer

Summary of data for patients dosed at 2.9 mpk or higher in patients with heavily pre-treated ovarian cancer

- 62% of patients saw a reduction in CA-125 levels of 50% or more or a normalization of CA-125 levels

- 35% of patients who were evaluable for progression have stayed on study for longer than 24 weeks; 11 patients at 5.2 mpk or higher are continuing study and have not yet reached 24 weeks

- 75% of patients have initial post-baseline scans showing stable disease or a partial response

- 100% of evaluable patients who had a CA-125 reduction of 50% or more or normalization achieved stable disease (confirmed or unconfirmed) or a partial response and are still on study

- Generally well-tolerated in this heavily pre-treated patient population - 89% of adverse events were grade 1 or 2

- Investor conference call and webcast will be held at 8 a.m. EDT summarizing data through April 20, 2020; AACR virtual poster presentation summarizing patient data through April 1, 2020, available at 9 a.m. EDT

SOUTH SAN FRANCISCO, Calif., April 27, 2020 /PRNewswire/ -- Sutro Biopharma, Inc. (NASDAQ: STRO), a clinical-stage drug discovery, development and manufacturing company focused on the application of precise protein engineering and rational design to create next-generation oncology therapeutics, today announced updated interim data regarding safety and anti-tumor activity results in heavily pre-treated patients with ovarian cancer from its on-going Phase 1 clinical trial (dose escalation phase) evaluating its folate receptor alpha (FolRα) antibody drug-conjugate (ADC) STRO-002. Sutro will host a conference call and live audio webcast on Monday, April 27, at 8 a.m. EDT to discuss the

STRO-002 data.

"We designed STRO-002 to have a wider therapeutic window, with the potential for improved tumor control and better patient tolerability, than other FolRα targeted therapies," said Bill Newell, CEO of Sutro Biopharma. "The data we present today from this all-comers trial suggest that our optimally designed ADC can achieve these objectives. In 75% (15 of 20) of ovarian cancer patients at STRO-002 dose levels of 2.9 milligrams per kilogram (mpk) or higher, we saw in the initial post-baseline scans one partial response and 14 stable disease. This level of tumor control is typically very difficult to achieve in these patients who have been heavily pre-treated, with a median of five prior lines of other therapies, and who have such advanced disease. Equally encouraging are the data showing that 13 patients had a ≥50% reduction or normalization of CA-125, including six confirmed responses, six unconfirmed responses and one prolonged CA-125 normalization. Of these 13 patients, one patient is not yet evaluable under RECIST criteria. All of the other 12 patients (100%) have also achieved stable disease (confirmed or unconfirmed) or a confirmed partial response. With 89% of adverse events (AEs) reported to be grade 1 or 2, we believe the emerging safety profile reflects our optimized design approach."

The interim clinical data for STRO-002 in patients treated at dose levels of 2.9 mpk or higher include: one patient with an ongoing confirmed partial response (36 weeks); five patients with confirmed stable disease (three up to 18 weeks, two up to 27 weeks); and seven ongoing patients who have unconfirmed stable disease at the six-week assessment point.

STRO-002 was generally well-tolerated and was mostly associated with mild AEs. Eighty-nine percent (89%) of AEs were grade 1 or grade 2 and prophylactic corticosteroid eye drops have not been necessary. Grade 3 treatment emergent AEs included fatigue, neutropenia, arthralgia, diarrhea, peripheral neuropathy and myalgia, with the only grade 4 treatment emergent AE being neutropenia; all neutropenias were reversible within one week.

"The preliminary evidence of anti-tumor activity we observed is encouraging, particularly in this heavily pre-treated patient population," said Wendel Naumann, MD, gynecologic oncologist at Levine Cancer Institute and a principal investigator on the STRO-002 study. "With limited therapeutic options for these patients, we are excited to continue to advance this clinical program to further investigate its therapeutic potential."

"These data support Sutro's continued development of targeted therapies for cancer patients and joins two other Sutro-developed and manufactured ADCs in clinical trials, including our BCMA-targeted ADC which is in a Phase 1 trial being conducted by our collaborator Bristol Myers Squibb," said Arturo Molina, MD, Sutro's Chief Medical Officer. "It is extremely encouraging that we see this preliminary evidence of anti-tumor activity at this stage of development. As we advance STRO-002 in the clinic, we plan to share additional data on the efficacy and safety of STRO-002 by the end of 2020 and we look forward to the potential to bring a new treatment option to ovarian cancer patients."

Through April 20, 2020, the Phase 1 trial of STRO-002 has enrolled 30 patients with recurrent platinum resistant or refractory ovarian cancer, without regard to FolRα expression levels. A dose expansion phase of this trial is planned to commence in the second half of 2020. Although maximum tolerated dose (MTD) has not been reached, Sutro is continuing to actively explore the 5.2 mpk to 6.0 mpk dose levels as it seeks to determine the recommended Phase 2 dose.

The ongoing Phase 1, open-label, multicenter, dose escalation trial with dose expansion of STRO-002 is designed to identify the MTD, the recommended Phase 2 clinical dose and to evaluate the safety, tolerability, and preliminary anti-tumor activity of STRO-002 in adults with advanced epithelial ovarian cancer, including fallopian or primary peritoneal cancer, and endometrial cancer. This trial is registered with clinicaltrials.gov identifier NCT03748186. Sutro discovered, developed and manufactures STRO-002 using its proprietary XpressCF+™ cell-free protein synthesis technology.

Conference Call Information:

To access the conference call and live audio webcast on Monday, April 27, at 8 a.m. EDT, please dial (833) 729-4781 (domestic) or (830) 213-7705 (international) and refer to conference ID 2699785.

The conference call will be webcast via the Investors page on the company's website at ir.sutrobio.com. Approximately two hours following the live event, a webcast replay of the conference call will be available through the Company Presentation page of the Investor section of the company's website at www.sutrobio.com for approximately 30 days.

Poster Presentation Details:

STRO-002-GM1, a First in Human, Phase 1 Study of STRO-002, an anti-Folate Receptor-alpha (FRα) Antibody Drug Conjugate (ADC), in Patients with Advanced Platinum-Resistant/Refractory Epithelial Ovarian Cancer (OC), including Fallopian Tube or Primary Peritoneal Cancers

Date & Time:	Monday, April 27, 2020, 9 a.m. to 6 p.m. EDT
Location:	The AACR Virtual Meeting at aacr.org
Poster Number:	CT125

The poster will be accessible through the Clinical/Scientific Presentation and Publication Highlights page of the News section of the company's website at www.sutrobio.com.

About Sutro Biopharma
Sutro Biopharma, Inc., located in South San Francisco, is a clinical-stage drug discovery, development and manufacturing company. Using precise protein engineering and rational design, Sutro is advancing next-generation oncology therapeutics.

Sutro's proprietary and integrated cell-free protein synthesis platform XpressCF® and site-specific conjugation platform, XpressCF+™, led to the discovery of STRO-001 and STRO-002, Sutro's first two internally-developed ADCs. STRO-001 is a CD74-targeting ADC currently being investigated in a Phase 1 clinical trial of patients with advanced B-cell malignancies, including multiple myeloma and non-Hodgkin lymphoma. STRO-001 was granted Orphan Drug Designation by the FDA for multiple myeloma in October 2018. STRO-002 is a folate receptor alpha (FolRα)-targeting ADC, currently being investigated in a Phase 1 clinical trial of patients with ovarian and endometrial cancers. This is the second product candidate to be evaluated in clinical trials resulting from Sutro's XpressCF® and XpressCF+™ technology platforms. A third program, CC-99712 (BCMA-targeting ADC), which is part of Sutro's collaboration with Bristol Myers Squibb (formerly Celgene Corporation), is enrolling patients for its Phase 1 clinical trial of patients with multiple

myeloma. Sutro's proprietary technology was responsible for the discovery and manufacturing of CC-99712, for which Bristol Myers Squibb has worldwide development and commercialization rights. Sutro is entitled to development and regulatory milestone payments and tiered royalties from Bristol Myers Squibb for this BCMA ADC. Sutro is dedicated to transforming the lives of cancer patients by creating medicines with improved therapeutic profiles for areas of unmet need.

To date, Sutro has designed cytokine-based immuno-oncology therapies, ADCs, vaccines and bispecific antibodies primarily directed at clinically-validated targets for which the current standard of care is suboptimal.

Sutro's platform allows it to accelerate discovery and development of potential first-in-class and best-in-class molecules through rapid and systematic evaluation of protein structure-activity relationships to create optimized homogeneous product candidates.

In addition to developing its own oncology pipeline, Sutro 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 developing therapeutics designed to more efficiently kill tumors without harming healthy cells.

Additional multimedia content from Sutro regarding STRO-001 and STRO-002 can be found here and here.

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

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995, including, but not limited to, anticipated preclinical and clinical development activities, timing of announcements of clinical results, potential benefits of the company's product candidates and platform and potential market opportunities for the company's product candidates. All statements other than statements of historical fact are statements that could be deemed forward-looking statements. Although the company believes that the expectations reflected in such forward-looking statements are reasonable, the company cannot guarantee future events, results, actions, levels of activity, performance or achievements, and the timing and results of biotechnology development and potential regulatory approval is inherently uncertain. Forward-looking statements are subject to risks and uncertainties that may cause the company's actual activities or results to differ significantly from those expressed in any forward-looking statement, including risks and uncertainties related to the company's ability to advance its product candidates, the receipt and timing of potential regulatory designations, approvals and commercialization of product candidates, the impact of the COVID-19 pandemic on the Company's business, clinical trial sites, supply chain and manufacturing facilities, the Company's ability to maintain and recognize the benefits of certain designations received by product candidates, the timing and results of preclinical and clinical trials, the company's ability to fund development activities and achieve development goals, the company's ability to protect intellectual property, and the Company's commercial collaborations with third parties and other risks and uncertainties described under the

heading "Risk Factors" in documents the company files from time to time with the Securities and Exchange Commission. These forward-looking statements speak only as of the date of this press release, and the company undertakes no obligation to revise or update any forward-looking statements to reflect events or circumstances after the date hereof.

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