For Immediate Release

OncoMed Pharmaceuticals Advances Two Notch Pathway Product Candidates in Clinical Development

Anti-Notch2/3 (OMP-59R5) Phase 1b/2 ALPINE Trial in Pancreatic Cancer Initiated

Anti-Notch1 (OMP-52M51) IND Accepted by FDA

Achievements Trigger $8M in Milestone Payments from GSK

Redwood City, CA – October 4, 2012 – OncoMed Pharmaceuticals, Inc., a clinical stage, research and discovery company developing novel therapeutics that target cancer stem cells, today announced clinical progress with two of its Notch pathway product candidates, resulting in $8 million in milestone payments from the company's strategic collaborator GlaxoSmithKline (GSK).

Anti-Notch2/3 (OMP-59R5)

OncoMed has initiated a Phase 1b/2 clinical trial in its anti-Notch2/3 antibody (OMP-59R5) program. In the Phase 1b/2 "ALPINE" trial (**A**ntibody therapy in first-**L**ine **P**ancreatic cancer **I**nvestigating anti-**N**otch **E**fficacy and safety), Anti-Notch2/3 is being tested in combination with gemcitabine in first-line advanced pancreatic cancer patients. Following a Phase 1b safety run-in, a randomized Phase 2 clinical trial will proceed in these patients to compare the efficacy of standard-of-care gemcitabine either with Anti-Notch2/3 or with placebo. The two primary endpoints of the Phase 2 part of the trial will be progression-free survival (PFS) in the Anti-Notch2/3 arm compared to a placebo arm in all patients, as well as in patients who have a particular biomarker. Key secondary and exploratory endpoints include overall survival, response rate, and safety, and these endpoints will be assessed in all patients, as well as in the biomarker positive subset of patients.

Dr. Lon Smith, from the South Texas Accelerated Research Therapeutics (START) Center for Cancer Care, who treated the first patient dosed in the ALPINE study, noted, "This is an exciting new clinical trial with a novel anti-cancer treatment that we hope will have a big impact for patients with pancreatic cancer. The fact that the trial also includes a predictive biomarker to potentially identify patients who might gain greater clinical benefit from Anti-Notch2/3 is also a new and exciting direction in the experimental treatment of patients with pancreatic cancer."

Anti-Notch1 (OMP-52M51)

An Investigational New Drug (IND) application filed by OncoMed has been accepted by the FDA, thereby allowing OncoMed to advance its anti-Notch1 antibody (OMP-52M51) to clinical testing. OncoMed plans to initiate a single-agent, dose escalation and expansion Phase 1 clinical trial in hematologic cancers in 2012 and plans to file an additional IND application later in 2012 in solid tumors. The clinical trials will

assess safety, pharmacokinetics, pharmacodynamics, and initial evidence of efficacy via a biomarker-based patient selection approach.

“The OMP-59R5 Phase 1b/2 clinical program is our first Phase 2 trial and represents a significant advancement in the company’s pipeline of anti-cancer stem cell therapies,” said Paul Hastings, President and Chief Executive Officer of OncoMed Pharmaceuticals. “In addition, the acceptance from the FDA to begin clinical testing for OMP-52M51 represents the fifth product candidate from our R&D platform to be cleared to enter clinical testing. For both programs, we have developed comprehensive biomarker strategies to facilitate efficient development in patients we believe will be most likely to benefit from targeted Notch pathway signaling blockade,” added Hastings.

OMP-59R5 and OMP-52M51 are part of OncoMed’s collaboration with GlaxoSmithKline. In December 2007, OncoMed and GSK entered into a broad strategic alliance to discover and develop novel product candidates targeting cancer stem cells via Notch pathway signaling modulation. GSK retains an option through the end of certain Phase 2 clinical trials to obtain an exclusive license to OMP-59R5. GSK also retains an option through the end of certain Phase 1 or certain Phase 2 clinical trials to obtain an exclusive license to OMP-52M51.

About Cancer Stem Cells

Cancer stem cells, or CSCs, are the subpopulation of cells in a tumor responsible for driving growth and metastasis of the tumor. CSCs, also known as tumor-initiating cells, exhibit certain properties which include the capacity to divide and give rise to new CSCs via a process called self-renewal and the capacity to differentiate or change into the other cells that form the bulk of the tumor. Common cancer drugs target bulk tumor cells but have limited impact on CSCs, thereby providing a path for recurrence of the tumor. OncoMed’s product candidates target CSCs by blocking self-renewal and driving differentiation of CSCs toward a non-tumorigenic state, and also impact bulk tumor cells. OncoMed believes that its product candidates are distinct from the current generations of chemotherapies and targeted therapies, and have the potential to significantly impact cancer treatment and the clinical outcome of patients with cancer.

About OMP-59R5

OMP-59R5 is a fully human monoclonal antibody that targets the Notch2 and Notch3 receptors. Initially discovered by screening a phage display library against the Notch2 receptor, the antibody binds to a conserved epitope on Notch2 and Notch3. Preclinical studies have demonstrated that OMP-59R5 exhibits two mechanisms of action: (1) by downregulating Notch pathway signaling, OMP-59R5 appears to have anti-CSC effects, and (2) OMP-59R5 affects pericytes, impacting stromal and tumor microenvironment. The program is also currently in a single-agent Phase Ia trial in advanced solid tumor patients. Data for this trial were presented at the American Society of Clinical Oncology, or ASCO, conference in June 2012.

About OMP-52M51

OMP-52M51 is a humanized monoclonal antibody targeted to the Notch1 receptor that we believe may have utility in hematologic malignancies and solid tumors. OMP-52M51 has shown substantial anti-tumor and anti-CSC activity in Notch-dependent tumors in preclinical studies. Certain hematologic malignancies have mutations that increase Notch1 signaling activity and may be a primary driver of tumor growth as well as resistance to chemotherapy. Biomarker tests have been identified to enable an analysis of possible predictive biomarkers in future clinical trials for OMP-52M51 to identify patient subsets where activity is likely to be strongest in both hematologic malignancies and in specific solid tumors.

About OncoMed Pharmaceuticals

OncoMed Pharmaceuticals is a clinical-stage company that discovers and develops novel therapeutics targeting cancer stem cells, the cells shown to be capable of driving tumor growth, recurrence and metastasis. OncoMed has advanced into clinical development five anti-cancer therapeutics, anti-DLL4 (demcizumab, OMP-21M18), anti-Notch2/3 (OMP-59R5), anti-Fzd7 (OMP-18R5), Fzd8-Fc (OMP-54F28), and anti-Notch1 (OMP-52M51), which target key cancer stem cell signaling pathways Notch and Wnt. In addition, OncoMed's pipeline includes several novel preclinical product candidates targeting multiple validated cancer stem cell pathways, including the RSPO-LGR pathway. OncoMed has formed strategic alliances with Bayer Pharma AG and GlaxoSmithKline. Privately held, OncoMed's investors include: US Venture Partners, Latterell Venture Partners, The Vertical Group, Morgenthaler Ventures, Phase4Ventures, Delphi Ventures, Adams Street Partners, De Novo Ventures, Bay Partners and GlaxoSmithKline. Additional information can be found at the company's website: www.oncomed.com.

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