Cytokinetics Retains Development and Commercialization Rights to Ispinesib and SB-743921

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GlaxoSmithKline Continues to Lead Development Activities for GSK-923295

SOUTH SAN FRANCISCO, CA, Dec 23, 2008 (MARKET WIRE via COMTEX News Network) -- Cytokinetics, Incorporated (NASDAQ: CYTK) and GlaxoSmithKline (GSK) announced today that GSK has informed Cytokinetics that it will not exercise its option to license ispinesib or SB-743921 as provided under the Collaboration and License Agreement entered into by the companies in 2001. All rights to ispinesib and SB-743921, each novel inhibitors of kinesin spindle protein (KSP), will revert to Cytokinetics, on agreed terms. The collaboration between Cytokinetics and GSK will continue, and will be focused on the development by GSK of GSK-923295, an inhibitor of centromere-associated protein E (CENP-E).

"The seven year collaboration between Cytokinetics and GSK has generated three novel drug candidates now in clinical development," said Paolo Paoletti, MD Senior Vice President of GSK Oncology R&D. "The decision by GSK to not exercise options on ispinesib and SB-743921 was the result of a shift in portfolio direction for GSK. We continue to believe that the novel mechanism of anti-mitotics may bring hope to cancer patients, reflected in GSK's ongoing development of GSK-923295 under its collaboration with Cytokinetics."

"While we are disappointed in this outcome, we understand GSK's business decision. We are encouraged by the safety and tolerability of each of ispinesib and SB-743921 as well as the amplified activity observed with the more dose-dense scheduling of these novel drug candidates," stated Robert I. Blum, Cytokinetics' President and Chief Executive Officer. "We are committed to advancing these two drug candidates through to the end of Phase I and will then evaluate the next steps for ispinesib and SB-743921 in context of the results, required funding and other partnering possibilities."

Background on Cytokinetics and GlaxoSmithKline Strategic Alliance

In June 2001, Cytokinetics and GSK entered into a broad strategic alliance to discover, develop and commercialize novel small molecule therapeutics targeting mitotic kinesins for applications in the treatment of cancer and other diseases. The strategic alliance has generated three drug candidates in clinical development, ispinesib and SB-743921, both inhibitors of KSP, and GSK-923295, an inhibitor of CENP-E. Under a November 2006 amendment to its collaboration and license agreement with GSK, Cytokinetics assumed responsibility for the costs and activities associated with the continued development of ispinesib and SB-743921, subject to GSK's option to resume responsibility for some or all development and commercialization activities associated with each of these novel drug candidates, exercisable during a defined period. With today's announcement, Cytokinetics will proceed, independent of GSK, with the further development of ispinesib and SB-743921 subject to agreed terms. GSK-923295, now in a Phase I clinical trial in advanced cancers, is being developed under the strategic alliance by GSK. In June 2008, Cytokinetics announced a further one-year extension of the strategic alliance's research term to continue activities focused towards translational research directed to CENP-E. Each company will receive royalties from the sale of any products arising from the strategic alliance that the other company progresses to commercialization. For products that GSK progresses in development, Cytokinetics retains a product-by-product option to co-fund certain later-stage development activities, thereby providing Cytokinetics an opportunity to increase its potential royalties and obtain co-promotion rights in North America.

Development Status of Ispinesib

In September 2008, at the American Society of Clinical Oncology Breast Cancer Symposium, Cytokinetics presented interim results from the Phase I portion of its Phase I/II clinical trial of ispinesib. Interim data demonstrated that this drug candidate was well-tolerated when administered as a 1-hour intravenous infusion on days 1 and 15 of a 28-day cycle with the most frequent adverse event being neutropenia. The best responses observed to date were investigator-reported tumor reductions of 30% or greater in the sum of the target lesion diameter, reported in 3 patients. One of these patients had an investigator-reported partial response according to the Response Evaluation Criteria in Solid Tumors (RECIST). Cytokinetics continues to enroll and dose-escalate patients in the Phase I portion of this trial. Cytokinetics presented additional data related to ispinesib at the San Antonio Breast Cancer Symposium in December.

In June 2007, Cytokinetics reported final results of a Phase II clinical trial conducted by GlaxoSmithKline (GSK) designed to evaluate the safety and efficacy of ispinesib in the second- or third-line treatment of patients with locally advanced or metastatic breast cancer whose disease had recurred or progressed despite treatment with anthracyclines and taxanes. In that trial, patients received ispinesib as monotherapy at 18 mg/m2 as a 1-hour intravenous infusion every 21 days. The primary endpoint of the trial was objective response by RECIST. Partial responses, observed in 4 of 45 evaluable patients, were confirmed by independent radiology review and were seen in liver, lung and lymph node metastases. The duration of these responses, also independently reviewed, ranged from 7.1 weeks to 30.0 weeks. The median time to progression in the treated population was 5.9 weeks. The adverse events were manageable, predictable and consistent with those seen in the Phase I trials of ispinesib. The most common grade 3/4 adverse events observed in the 50 patients evaluable for safety were neutropenia (21 patients), febrile neutropenia (4 patients) and neutropenic sepsis (1 patient).

Development Status of SB-743921

In June and October 2008, Cytokinetics reported interim data from the Phase I portion of a Phase I/II clinical trial of SB-743921 designed to evaluate the safety, tolerability, pharmacodynamics and pharmacokinetic profile of this novel drug candidate administered as a one-hour infusion on days 1 and 15 of a 28-day schedule, and to assess the potential efficacy and the MTD of SB-743921 administered on this schedule in patients with Hodgkin or non-Hodgkin lymphoma. The authors observed that SB-743921 is well-tolerated at the doses and schedule currently being studied in the Phase I portion of the ongoing Phase I/II clinical trial. The authors concluded that the pattern of neutropenia onset and recovery support a dosing schedule for SB-743921 of days 1 and 15 of a 28-day cycle. This represents a greater dose density (0.43 mg/m2/day) than on the previously studied dosing regimen of 4 mg/m2 or 0.19 mg/m2/day every 3 weeks. The only DLT observed without granulocyte colony-stimulating factor (G-CSF) was neutropenia; therefore, further dose escalation with empiric, prophylactic G-CSF is ongoing. Preliminary efficacy has been observed in Hodgkin

lymphoma patients (n=2 PRs) at doses of 6 mg/m2 and above. Cytokinetics presented additional data related to SB-743921 at the American Society of Hematology meeting in December.

Development Status of GSK-923295

In October 2008, GSK reported interim data from a Phase I dose escalation and pharmacokinetic study of GSK-923295 in patients with solid tumors. The primary objective of the trial is to determine the maximum tolerated dose (MTD), dose-limiting toxicity (DLT), safety and pharmacokinetics (PK) of GSK-923295 in advanced, refractory cancers. In this Phase I clinical trial, the authors concluded that GSK-923295 was well-tolerated at doses evaluated to date, ranging from 10-105 mg/m2. Of the adverse events observed, nausea and fatigue (all less than or equal to grade 2) were the most frequent non-hematological toxicities, and anemia (all less than or equal to grade 2) was the most frequent hematological toxicity. In addition, no neurotoxicity was observed. To date, the MTD has not been reached but one reversible DLT was observed in the form of aspartate aminotransferase (AST) elevation. Finally, the authors concluded that the plasma pharmacokinetics of GSK-923295 were dose-proportional and exhibited low intra-patient and modest inter-patient variability.

Background on Mitotic Kinesin Inhibitors

Since their introduction over 40 years ago, anti-mitotic drugs (taxanes and vinca alkaloids) have advanced the treatment of cancer and are commonly used for the treatment of several tumor types. However, these drugs have demonstrated limited treatment benefit against certain cancers. In addition, these drugs target tubulin, a cytoskeletal protein involved not only in mitosis and cell proliferation, but also in other important cellular functions. Inhibition of these other cellular functions produces dose-limiting toxicities such as peripheral neuropathy, an impairment of peripheral nervous system function. Neuropathies are thought to result when these drugs interfere with the dynamics of microtubule filaments that are responsible for the long-distance transport of important cellular components within nerve cells.

Mitotic kinesins are essential to mitosis, and, unlike tubulin, are not believed to be present in non-dividing cells. Cytokinetics believes that drugs that inhibit KSP, CENP-E and other mitotic kinesins may represent the next generation of anti-mitotic cancer drugs by arresting mitosis and cell proliferation without impacting unrelated, normal cellular functions, thereby avoiding many of the toxicities commonly experienced by patients treated with existing anti-mitotic drugs.

KSP is a mitotic kinesin which acts at the earliest stage of spindle formation. Early in mitosis, during prophase, KSP forces the emerging spindle poles to move apart, driving formation of a bipolar spindle and enabling chromosome segregation into two resultant daughter cells. KSP is not expressed in neurons and has only one known function, to drive spindle pole separation during mitosis. Inhibition of KSP motor function prevents formation of a bipolar spindle. KSP inhibition results in cell cycle arrest in mitosis with a characteristic monopolar spindle on which chromosomes are arrayed. In cancer cells, duplicated chromosomes remain attached to this monopolar spindle in a persistent state of cell cycle arrest, resulting in programmed cell death, or apoptosis.

CENP-E plays an essential role in chromosome movement during early mitosis and integrates mitotic spindle mechanics with regulators of the mitotic checkpoint; hence CENP-E is directly involved in coupling the mechanics of mitosis with the mitotic checkpoint signaling machinery, regulating cell-cycle transition from metaphase to anaphase. CENP-E is also essential for prometaphase chromosome movements that contribute to metaphase chromosome alignment. These processes are essential to cell proliferation. CENP-E is expressed exclusively in proliferating cells and is abundant during mitosis; it is absent from non-proliferating cells, including neurons. Inhibition of CENP-E induces cell cycle arrest in mitosis with bipolar mitotic spindles and misaligned chromosomes leading to subsequent apoptosis.

About Cytokinetics

Cytokinetics is a biopharmaceutical company focused on the discovery, development and commercialization of novel small molecule drugs that may address areas of significant unmet clinical needs. Cytokinetics' cardiovascular disease program is focused to cardiac myosin, a motor protein essential to cardiac muscle contraction. Cytokinetics' lead compound from this program, CK-1827452, a novel small molecule cardiac myosin activator, entered Phase II clinical trials for the treatment of heart failure in 2007. Under a strategic alliance established in 2006, Cytokinetics and Amgen Inc. are performing joint research focused on identifying and characterizing activators of cardiac myosin as back-up and follow-on potential drug candidates to CK-1827452. Amgen has obtained an option for an exclusive license to develop and commercialize CK-1827452, subject to Cytokinetics' development and commercial participation rights.

Cytokinetics' cancer program is focused on mitotic kinesins, a family of motor proteins essential to cell division. Cytokinetics is developing two novel drug candidates that have arisen from this program, ispinesib and SB-743921, each a novel inhibitor of kinesin spindle protein (KSP), a mitotic kinesin. Cytokinetics is conducting the Phase I portion of a Phase I/II clinical trial of ispinesib as monotherapy as a first-line treatment in chemotherapy-naive patients with locally advanced or metastatic breast cancer. In addition, Cytokinetics is conducting the Phase I portion of a Phase I/II trial of SB-743921 in patients with non-Hodgkin or Hodgkin lymphoma. Under a strategic alliance established in 2001, Cytokinetics and GlaxoSmithKline (GSK) are conducting research and development activities focused on GSK-923295, an inhibitor of centromere-associated protein E (CENP-E); GSK began a Phase I clinical trial with GSK-923295 in 2007.

In April 2008, Cytokinetics announced the selection of a potential drug candidate directed towards skeletal muscle contractility which may be developed as a potential treatment for skeletal muscle weakness associated with neuromuscular diseases or other conditions. All of these drug candidates and potential drug candidates have arisen from Cytokinetics' research activities and are directed towards the cytoskeleton. The cytoskeleton is a complex biological infrastructure that plays a fundamental role within every human cell. Additional information about Cytokinetics can be obtained at www.cytokinetics.com.

This press release contains forward-looking statements for purposes of the Private Securities Litigation Reform Act of 1995 (the "Act"). Cytokinetics disclaims any intent or obligation to update these forward-looking statements, and claims the protection of the Act's safe harbor for forward-looking statements. Examples of such statements include, but are not limited to, statements relating to the further clinical development of ispinesib, SB-743921 and GSK-923295, including the design, conduct and results of clinical trials for these potential drugs, and the potential significance of such results; the properties and potential clinical benefits of ispinesib, SB-743921 and GSK-923295, and the potential further development by Cytokinetics of ispinesib and SB-743921. Such statements are based on management's current expectations, but actual results may differ materially due to various risks and uncertainties, including, but not limited to, potential difficulties or delays in the development, testing, regulatory approval or production of these drug candidates that could slow or prevent clinical development or product approval, including risks that: current and past results of clinical trials or preclinical studies may not be indicative of future clinical trials results, patient enrollment for or conduct of clinical trials may be difficult or delayed; adverse side effects or inadequate therapeutic efficacy may observed for ispinesib, SB-743921 and GSK-923295; the U.S. Food and Drug Administration or foreign regulatory agencies may delay or limit Cytokinetics' or GSK's ability to conduct clinical trials with these product candidates; Cytokinetics may incur unanticipated research and development and other costs, or be unable to obtain additional financing necessary to conduct further development of ispinesib and SB-74392; standards of care may change and others may introduce products or alternative therapies for the treatment of indications that ispinesib, SB-743921 and GSK-923295 may target; and risks and uncertainties relating to the continued development of GSK-923295 by GSK, and, if so, the timing and receipt of payments, including milestones and royalties on future potential product sales. For further information regarding these and other risks related to Cytokinetics' business, investors should consult Cytokinetics' filings with the Securities and

Exchange Commission.

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