Cytokinetics Announces Data Relating to GSK-923295 and SB-743921 Presented at the 2008 EORTC-NCI-AACR International Symposium

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SOUTH SAN FRANCISCO, CA, Oct 23, 2008 (MARKET WIRE via COMTEX News Network) -- Cytokinetics, Incorporated (NASDAQ: CYTK) announced today that three posters containing data on GSK-923295, an inhibitor of centromere-associated protein E (CENP-E), and one poster containing data on SB-743921, an inhibitor of kinesin spindle protein (KSP), were presented at the 20th EORTC-NCI-AACR Symposium on Molecular Targets and Cancer Therapeutics held at the Geneva Palexpo, Geneva, Switzerland.

Three posters presented today contain preclinical or clinical data relating to GSK-923295, which is currently being studied in a GlaxoSmithKline (GSK) sponsored Phase I clinical trial designed to evaluate the safety, tolerability, pharmacodynamics and pharmacokinetic profile of this novel drug candidate in patients with solid tumors. An additional poster contains preclinical and clinical data relating to SB-743921, which is currently being evaluated in a Cytokinetics sponsored Phase I/II clinical trial 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 maximum tolerated dose (MTD) of SB-743921 administered on this schedule in patients with Hodgkin or non-Hodgkin lymphoma.

Poster Presentations at EORTC-NCI-AACR Symposium:

A poster entitled, "A Phase I Dose Escalation and Pharmacokinetic Study of the Novel Mitotic Checkpoint Inhibitor GSK923295A in Patients with Solid Tumors," was presented by Ronald Fleming, PhD of GSK. The primary objective of this dose-escalation and pharmacokinetic Phase I clinical 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.

A second poster entitled, "2-[18F] fluoro-2-deoxy-d-glucose Positron Emission Tomography is an Early Biomarker for Tumor Growth Inhibition of Human Colo205 Xenografts by the Novel and Selective CENP-E Inhibitor, GSK923295A," was presented by Ken Wood, PhD of Cytokinetics. The poster described a preclinical study designed to evaluate positron emission tomography (PET) using 2-[18F]fluoro-s-deoxy-d-glucose (FDG) imaging as a biomarker for GSK-923295. The authors noted that previous studies of GSK-923295 have demonstrated significant activity against Colo205 xenografts and treatment of Colo205 tumors with GSK-923295 resulted in significant reduction in uptake in [18F]-FDG. This decrease was observed early after the onset of treatment and prior to tumor regression. The authors concluded that [18F]-FDG-PET may provide a means of evaluating pharmacodynamic activity in patients treated with GSK-923295.

A third poster entitled, "GSK923295A, a Novel and Selective CENP-E Inhibitor, Induces Pharmacodynamic Effects and Anti-tumor Activity in Human Colo205 Xenografts," was presented by Ken Wood, PhD of Cytokinetics. This poster described a preclinical study to evaluate the pharmacodynamic effects and anti-tumor activity of GSK-923295 in human Colo205 xenografts. The authors concluded that GSK-923295 has dose-dependent pharmacodynamic activity in Colo205 xenografts. The effects observed included an increase in abnormal mitotic figures, some with lagging chromosomes, which is a phenotype characteristic of CENP-E, a decrease in post-metaphase figures and an increase in pHH3-positive cells. The intensity of the pharmacodynamic response correlated with efficacy. This was demonstrated by showing that only at efficacious doses was an increase in pHH3-positive cells observed. Finally, the authors concluded that exposure to GSK-923295 was dose-dependent. Increased tumor, but not blood, exposure was observed after the second cycle of dosing.

A poster entitled, "Translational Development of the Novel Kinesin Spindle Protein (KSP/Eg5) Inhibitor SB-743921 (SB-921) in Lymphoma: From Preclinical Models to Phase 1 Studies," was presented by Jasmine Zain, MD and Owen A. O'Connor, MD, PhD, of Columbia University Medical Center, New York, New York. This poster demonstrated the preclinical results in various models as well as an interim clinical summary for the ongoing Phase I/II clinical trial for SB-743921. The authors concluded that SB-743921 demonstrated potent activity in preclinical models of Diffuse Large B-Cell Lymphoma (DLBCL) both in vitro and in vivo. In addition, preclinical observations in these DLBCL models are consistent with cell-cycle arrest in G2/M-Phase of mitosis. These preclinical findings provide additional scientific rationale for continuing the currently ongoing Phase I/II clinical trial 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 on-going Phase I/II clinical trial. In addition, the authors observe that a greater dose-density can be administered on a q2W schedule than a q21D schedule. And finally, preliminary efficacy was observed in Hodgkin lymphoma patients (n=2 PRs) at doses of 6 mg/m2 and above.

Development Status of GSK-923295 and Background on CENP-E

GSK-923295 is a small-molecule inhibitor of centromere-associated protein E (CENP-E), and the third novel drug candidate to arise from Cytokinetics' broad strategic alliance with GlaxoSmithKline (GSK). In August 2007, the company announced that GSK initiated a first-time-in-humans Phase I clinical trial of GSK-923295 in patients with solid tumors. This first Phase I clinical trial is an open-label, non-randomized, dose-finding trial designed to investigate the safety, tolerability, pharmacodynamics and pharmacokinetic profile of GSK-923295 in patients with advanced solid tumors. As reported at the 2007 Annual Meeting of the American Association for Cancer Research (AACR), GSK-923295 demonstrated a broad spectrum of activity against a range of human tumor xenografts grown in nude mice, including models of colon, breast, ovarian, lung and other tumors.

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. GSK-923295 is the first drug candidate to enter human clinical trials that specifically targets CENP-E.

Development Status of SB-743921 and Background on KSP

SB-743921, Cytokinetics' second KSP inhibitor to enter clinical trials, is structurally distinct from ispinesib, Cytokinetics' most advanced anti-cancer drug candidate. In May 2006 at the American Society of Clinical Oncology (ASCO) annual meeting, GSK presented data from an open-label, non-randomized, dose-finding Phase I clinical trial of SB-743921 administered as a 1-hour intravenous infusion once every 21 days to patients with advanced solid tumors. The authors concluded that SB-743921 appeared to have an acceptable tolerability profile on this schedule. The DLTs reported at that time were prolonged neutropenia, febrile neutropenia (with or without infection), elevated transaminases, hyperbilirubinemia and hyponatremia. Neurotoxicities, mucositis, thrombocytopenia, alopecia and nausea/vomiting requiring pre-medication were not observed.

In April 2006, Cytokinetics announced the initiation of a Phase I/II clinical trial of SB-743921 in connection with an expanded development program for SB-743921. This Phase I/II clinical trial is an open-label, non-randomized study to investigate the safety, tolerability, pharmacodynamics and pharmacokinetic profile of SB-743921 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 and non-Hodgkin lymphoma. In May 2008, at the ASCO annual meeting and the 10th International Conference on Malignant Lymphoma, Cytokinetics announced interim results from the Phase I portion of this trial. The authors concluded that the pattern of neutropenia onset and recovery support the dosing schedule being evaluated. The MTD of SB-743921 was 6 mg/m2 when given days 1 and 15 of a 28-day cycle without granulocyte colony-stimulating factor (G-CSF) support and the only DLT observed without G-CSF was neutropenia.

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.

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 CENP-E, KSP 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.

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 centromere-associated protein E (CENP-E). In June 2007, Cytokinetics announced a further one-year extension of the strategic alliance's research term, which began in June 2001, to continue activities focused towards translational research directed to 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. The November 2006 amendment superseded a September 2005 amendment to the collaboration and license agreement, which specifically related to SB-743921. GSK-923295, now in a Phase I clinical trial in advanced cancers, is being developed under the strategic alliance by GSK. Cytokinetics will receive royalties from the sale of any products arising from the strategic alliance that GSK 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 for the applicable products in North America.

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. Under a strategic alliance established in 2001, Cytokinetics and GlaxoSmithKline (GSK) are conducting research and development activities focused on the potential treatment of cancer. 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 a Phase I 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 a Phase I trial of SB-743921 in patients with non-Hodgkin or Hodgkin lymphoma. GSK has an option for the joint development and commercialization of ispinesib and SB-743921. Cytokinetics and GSK are conducting collaborative research activities directed to the mitotic kinesin centromere-associated protein E (CENP-E). GSK-923295, a CENP-E inhibitor, is being developed under the strategic alliance by GSK; 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 Cytokinetics' and GSK's research and development programs, including the design, conduct and results of clinical trials; the properties and potential benefits of Cytokinetics' drug candidates and potential drug candidates; and Cytokinetics' potential receipt of funds and anticipated role in development and commercialization activities under its collaboration and license agreement with GSK. 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 Cytokinetics' 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, Cytokinetics' drug candidates may have adverse side effects or inadequate therapeutic efficacy, the U.S. Food and Drug Administration or foreign regulatory agencies may delay or limit Cytokinetics' or its partners' ability to conduct clinical trials, and Cytokinetics may be unable to obtain or maintain patent or trade secret protection for its intellectual property; GSK may decide to postpone or discontinue development activities for GSK-923295; Cytokinetics may incur unanticipated research and development and other costs or be unable to obtain additional financing necessary to conduct development of its products; standards of care may change and others may introduce products or alternative therapies for the treatment of indications Cytokinetics' drug candidates and potential drug candidates may target; and risks and uncertainties relating to the timing and receipt of payments from Cytokinetics' partners, including option fees, milestones and royalties on future potential product sales under its collaboration agreement with GSK and Amgen. For further information regarding these and other risks related to Cytokinetics' business, investors should consult Cytokinetics' filings with the Securities and Exchange Commission.

Contact:
Christopher S. Keenan
Director, Investor Relations
(650) 624-3000

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