Cytokinetics Announces Non-Clinical Data Relating to CK-2017357 Presented at the 2009 Experimental Biology Conference

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Mechanistic Data Support Progression of Novel Skeletal Muscle Activator Into Clinical Development in 2009

SOUTH SAN FRANCISCO, CA, Apr 20, 2009 (MARKET WIRE via COMTEX) -- Cytokinetics, Incorporated (NASDAQ: CYTK) announced today that a poster containing data relating to CK-2017357, a fast skeletal muscle troponin activator, was presented at the 2009 Experimental Biology Conference held from April 18-22, 2009 in New Orleans, Louisiana. Cytokinetics plans to initiate a Phase I clinical trial of CK-2017357 in healthy volunteers later this year.

Poster Presentation at 2009 Experimental Biology Conference:

The poster titled, "The Fast Skeletal Troponin Activator, CK-2017357, Increases Skeletal Muscle Force in vitro and in situ," was presented on Sunday, April 19, 2009 by Alan Russell, Ph.D. of Cytokinetics. The objective of the study was to evaluate whether CK-2017357 changes force development in native skeletal muscle preparations in vitro, using skinned and living skeletal muscle fibers, and in situ, where nerve and blood supply are left intact. The authors demonstrated that CK-2017357 increased sub-maximal force development of fast skeletal muscle in vitro. Similar findings were observed in human skinned fast skeletal muscle fibers. In addition, compound specificity for fast skeletal muscle fibers was shown as skinned slow skeletal muscle fibers were approximately ten-fold less responsive to CK-2017357 than skinned fast skeletal muscle fibers. CK-2017357 did not appear to activate cardiac muscle fibers. CK-2017357 increased the force development in living muscle fibers at sub-maximal stimulation frequencies. Finally, in situ, CK-2017357 increased sub-maximal force development in a predominantly fast skeletal fiber muscle (extensor digitorum longus).

The authors concluded that these data support a proposed mechanism of action of CK-2017357 through calcium sensitization of the fast skeletal muscle troponin complex. In skinned muscle fibers, CK-2017357 increased the sensitivity of skeletal muscle to exogenously added calcium and in living muscle fibers to the frequency of electrical stimulation which results in calcium release within the muscle. In each case, the result is an increase in muscle force development at sub-maximal muscle activation, where muscle normally operates.

"We are pleased to have the opportunity to present these data regarding CK-2017357. These results support the novel mechanism of action of this first-in-class drug candidate intended to address the clinical unmet needs of certain diseases and medical conditions associated with aging, muscle wasting, and neuromuscular dysfunction," stated David J. Morgans, Jr., Ph.D., Cytokinetics' Executive Vice President, Preclinical Research and Development. "We believe that these data support the initiation of a first-time-in-humans clinical trial scheduled to occur this year."

Background on Skeletal Muscle Activators

Skeletal muscle contractility is driven by the sarcomere, the fundamental unit of skeletal muscle contraction. It is a highly ordered cytoskeletal structure composed of skeletal muscle myosin, the cytoskeletal motor that is directly responsible for converting chemical energy into the mechanical force, actin, and a set of regulatory proteins, which include the troponins and tropomyosin, which make the actin-myosin interaction dependent on changes in intracellular calcium levels. Cytokinetics' skeletal muscle contractility program is focused to the discovery and development of small molecule skeletal sarcomere activators and leverages Cytokinetics' expertise developed in its ongoing discovery and development of cardiac sarcomere activators, including the cardiac muscle myosin activator, CK-1827452, now in Phase II clinical development as a potential treatment for heart failure. Cytokinetics' skeletal sarcomere activators have demonstrated pharmacological activity that may lead to new therapeutic options for diseases associated with aging, muscle wasting, and neuromuscular dysfunction. The clinical effects of muscle wasting, fatigue and loss of mobility can range from decreased quality of life to, in some instances, life-threatening complications. By directly improving skeletal muscle function, a small molecule activator of the skeletal sarcomere may potentially enhance physical performance and quality of life in aging patients.

In January 2009, Cytokinetics announced that it planned to submit an investigational new drug application (IND) to the FDA in order to initiate a Phase I clinical trial of CK-2017357 in healthy volunteers this year. CK-2017357 was selected for development in April 2008 and is the lead potential drug candidate that has arisen from the company's skeletal muscle contractility program. The company has also designated a second skeletal muscle activator from this research program as a back-up development compound. CK-2017357 and the backup skeletal muscle activator are structurally distinct small molecule activators of the fast skeletal muscle troponin complex.

About Cytokinetics

Cytokinetics is a clinical-stage biopharmaceutical company focused on the discovery and development of novel small molecule therapeutics that modulate muscle function for the potential treatment of serious diseases and medical conditions. Cytokinetics' cardiac muscle contractility program is focused on cardiac muscle myosin, a motor protein essential to cardiac muscle contraction. Cytokinetics' lead compound from this program, CK-1827452, a novel small molecule cardiac muscle myosin activator, is in Phase II clinical trials for the treatment of heart failure. Amgen Inc. has obtained an option for an exclusive license to develop and commercialize CK-1827452, subject to Cytokinetics' development and commercialization participation rights. In April 2008, Cytokinetics announced the selection of a potential drug candidate, CK-2017357, directed towards skeletal muscle contractility which may be developed as a potential treatment for diseases and medical conditions associated with skeletal muscle weakness. In January 2009, Cytokinetics announced the selection of a potential drug candidate directed towards smooth muscle contractility which may be developed as a potential treatment for diseases associated with pulmonary arterial hypertension and bronchoconstriction.

Cytokinetics' cancer program is focused on mitotic kinesins, a family of motor proteins essential to cell division. Cytokinetics is developing two drug candidates that have arisen from this program, ispinesib and SB-743921, each an inhibitor of kinesin spindle protein. In addition, Cytokinetics and GlaxoSmithKline are conducting research and development activities focused on GSK-923295, an inhibitor of centromere-associated protein E.

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 results of research studies relating to CK-2017357 and the significance of such results; the potential benefits of Cytokinetics' drug candidates and potential drug candidates, including its skeletal muscle activators; and the planned submission of an IND and initiation of a Phase I clinical trial for CK-2017357. 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, production and marketing of Cytokinetics' drug candidates and potential drug candidates that could slow or prevent clinical development, product approval or market acceptance, including risks that current and past results of clinical trials or preclinical studies may not be indicative of future clinical trials results and that Cytokinetics' drug candidates and potential drug candidates may have unexpected adverse side effects or inadequate therapeutic efficacy. 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 & Media Relations
(650) 624-3000

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