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Aastrom Announces Results of Two Studies of Ixmyelocel-T Published in Stem Cell Research & Therapy

Results Demonstrate Reparative Properties of Unique Macrophage Population Found in Ixmyelocel-T and Potential Role in Reverse Transport of Cholesterol

ANN ARBOR, Mich., Nov. 1, 2013 (GLOBE NEWSWIRE) -- Aastrom Biosciences, Inc. (Nasdaq:ASTM), the leading developer of patient-specific expanded multicellular therapies for the treatment of severe chronic cardiovascular diseases, today announced that results from two separate research studies involving ixmyelocel-T, the company's lead product candidate, were published in the peer reviewed journal *Stem Cell Research & Therapy*.

Results from the first study, "Ixmyelocel-T, an Expanded Multicellular Therapy, Contains a Unique Population of M2-Like Macrophages", show that ixmyelocel-T contains M2-like macrophages characterized by expression of multiple, well-known M2 macrophage markers, decreased secretion of pro-inflammatory cytokines after inflammatory stimuli, and efficient removal of apoptotic cells. The population of macrophages generated in ixmyelocel-T is believed to play a role in tissue repair and regeneration.

"Our data demonstrate that ixmyelocel-T therapy contains a unique population of M2-like macrophages characterized by secretion of anti-inflammatory cytokines and expression of M2 markers CD206 and CD163. In addition to being involved in efficient removal of apoptotic cells, they also show elevated expression of MerTK, which is essential in limiting tissue injury and promoting repair. These findings provide further indication that these cells may play a key role in the treatment of diseases where tissue remodeling and immunomodulation are components of successful clinical outcomes," said Dr. Ronnda Bartel, chief scientific officer, Aastrom Biosciences. "We believe that this research also represents the first successful ex-vivo expansion of these anti-inflammatory cells."

In the second study, titled "Potential Beneficial Effects of Ixmyelocel-T in the Treatment of Atherosclerotic Diseases", ixmyelocel-T was treated with modified low-density lipoprotein (LDL) similar to that found in atherosclerotic plaques. The amounts of LDL uptake and expression of cytokines and key cholesterol transport genes were then measured in an attempt to mimic the pro-inflammatory environment in atherosclerotic lesions. The results of these analyses showed that ixmyelocel-T macrophages are able to influx modified cholesterol, remain anti-inflammatory in the face of lipid loading and inflammatory challenge, and display enhanced cholesterol efflux capabilities.

"This study indicates that the unique M2-like population of macrophages found in ixmyelocel-T is efficient at maintaining cholesterol homeostasis. As a result, ixmyelocel-T macrophages may exert highly beneficial effects and represent a potential new modality in the treatment of atherosclerotic disease," Dr. Bartel said.

Ixmyelocel-T is a patient-specific multicellular therapy expanded from a patient's own bone marrow. It is currently being evaluated in a Phase 2b clinical trial for treatment of advanced heart failure due to ischemic dilated cardiomyopathy (DCM). The Phase 2a trial in DCM patients confirmed that ixmyelocel-T was well-tolerated and that efficacy observations were consistent with improved function of impaired myocardium. Health Canada recently approved the company's application to initiate this clinical trial in Canada. Aastrom is also continuing to follow patients treated in the REVIVE Phase 3 clinical trial of ixmyelocel-T in the treatment of critical limb ischemia. Preclinical studies of ixmyelocel-T are in progress in atherosclerosis and fibrosis. Researchers at the University of Michigan are also studying the use of ixmyelocel-T in the treatment of craniofacial augmentation. Ixmyelocel-T is manufactured using Aastrom's proprietary, highly automated, fully closed [cell-processing system](#).

About Aastrom Biosciences

Aastrom Biosciences is the leader in developing patient-specific, expanded multicellular therapies for use in the treatment of patients with severe, chronic cardiovascular diseases. The company's proprietary cell-processing technology enables the manufacture of ixmyelocel-T, a patient-specific multicellular therapy expanded from a patient's own bone marrow and delivered directly to damaged tissues. Aastrom has advanced ixmyelocel-T into late-stage clinical development, including a Phase 2b clinical trial in patients with advanced heart failure due to ischemic dilated cardiomyopathy. For more information, please visit Aastrom's website at www.aastrom.com.

The Aastrom Biosciences, Inc. logo is available at <http://www.globenewswire.com/newsroom/prs/?pkgid=3663>

This document contains forward-looking statements, including, without limitation, statements concerning clinical trial plans and progress, objectives and expectations, clinical activity timing, intended product development, the performance and contribution of certain individuals and expected timing of collecting and analyzing treatment data, all of which involve certain risks and uncertainties. These statements are often, but are not always, made through the use of words or phrases such as "anticipates," "intends," "estimates," "plans," "expects," "we believe," "we intend," and similar words or phrases, or future or conditional verbs such as "will," "would," "should," "potential," "could," "may," or similar expressions. Actual results may differ significantly from the expectations contained in the forward-looking statements. Among the factors that may result in differences are the inherent uncertainties associated with the closing of the offering described herein, Aastrom's intended use of proceeds in connection with the offering, clinical trial and product development activities, regulatory approval requirements, competitive developments, and the availability of resources and the allocation of resources among different potential uses. These and other significant factors are discussed in greater detail in Aastrom's Registration Statement on Form S-1 described above, Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and other filings with the Securities and Exchange Commission. These forward-looking statements reflect management's current views and Aastrom does not undertake to update any of these forward-looking statements to reflect a change in its views or events or circumstances that occur after the date of this release except as required by law.

CONTACT: Media contact:

Andrea Coan

Berry & Company

acoan@berrypr.com

(212) 253-8881

Investor contact:

Chad Rubin

The Trout Group

crubin@troutgroup.com

(646) 378-2947