

Rosetta Genomics Announces Publication of Data Correlating miR-150 to Atrial Fibrillation in Patients with Chronic Systolic Heart Failure

Study demonstrating microRNAs to be good biomarkers for heart failure complements earlier Rosetta published study

Rosetta advancing a microRNA-based assay in heart failure

PRINCETON, N.J. and REHOVOT, Israel (March 3, 2014) – Rosetta Genomics Ltd. (NASDAQ: ROSG), a leading developer and provider of microRNA-based molecular diagnostics, announces data from a study of the Company’s microRNA technology was published online in the *American Journal of Cardiology* in an article entitled, “Relation of Reduced Expression of MiR-150 in Platelets to Atrial Fibrillation in Patients With Chronic Systolic Heart Failure.” The abstract and full article can be accessed at <http://www.ncbi.nlm.nih.gov/pubmed/24462065>.

miRNAs play an essential role in a variety of cardiovascular pathologies including hypertrophy, fibrosis, arrhythmia, ischemia, atherosclerosis and heart failure (HF).¹ The aim of this study was to evaluate the potential association of miRNAs in platelets with atrial fibrillation (AF) in patients with chronic systolic HF.

In the study, miRNA expression was measured in platelets and serum samples of 41 HF patients with and without AF and 35 controls who were age and gender matched to the HF group and had no known coronary, valvular, paroxysmal or persistent cardiac arrhythmia or myocardial disease.

The results showed that miR-150 expression was 3.2-fold lower in platelets of HF patients with AF relative to HF patients without AF. A similar effect was seen in serum samples from the same patients, in which miR-150 levels were 1.5-fold lower in HF patients with AF. Furthermore, the serum levels of miR-150 were correlated to platelet levels of miR-150 in patients with AF. In a comparison of miRNA expression levels in platelets from patients with HF and controls, none of the miRNAs, including miR-150, showed significant differences between the groups showing that platelet miRNA expression levels are not significantly altered by HF.

¹ Papageorgiou N, Tousoulis D, Androulakis E, Siasos G, Briasoulis A, Vogiatzi G, Kampoli AM, Tsiamis E, Tentolouris C, Stefanadis C. The role of microRNAs in cardiovascular disease. *Curr Med Chem* 2012;19:2605e2610.

"An increasing body of evidence indicates the important role of miRNAs in cardiovascular development and physiological function as well as in the pathogenesis of a wide range of cardiac diseases including HF. In addition, miRNAs are present in the circulation in a stable form and can therefore serve as novel diagnostic markers," stated Dganit Bar, Ph.D., Chief Scientific Officer of Rosetta Genomics.

"Atrial fibrillation is associated with poor prognosis in patients with heart failure. This study demonstrated a clear and significant association between both lower circulating and lower platelet levels of miR-150 levels with atrial fibrillation in chronic systolic heart failure," noted Kenneth A. Berlin, President and Chief Executive Officer of Rosetta Genomics. "We are encouraged by the publication of these important data, which, along with our earlier study published in the *European Journal of Heart Failure* in 2012, support our continued research efforts in the area of blood-based microRNA biomarkers in order to advance new assays for the early diagnosis and refined risk stratification of heart failure patients. We plan to perform additional studies aimed at further examining the expression of identified miRNA biomarkers in various blood fractions and anticipate launching a new assay related to this area in 2017."

About Rosetta Cancer Testing Services

Rosetta Cancer Tests are a series of microRNA-based diagnostic testing services offered by Rosetta Genomics. The Rosetta Cancer Origin Test™ can accurately identify the primary tumor type in primary and metastatic cancer including cancer of unknown or uncertain primary (CUP). Rosetta Mesothelioma Test™ diagnoses mesothelioma, a cancer connected to asbestos exposure. The Rosetta Lung Cancer Test™ accurately identifies the four main subtypes of lung cancer using small amounts of tumor cells. The Rosetta Kidney Cancer Test™ accurately classifies the four most common kidney tumors: clear cell renal cell carcinoma (RCC), papillary RCC, chromophobe RCC and oncocytoma. Rosetta's assays are designed to provide objective diagnostic data; it is the treating physician's responsibility to diagnose and administer the appropriate treatment. In the U.S. alone, Rosetta Genomics estimates that 200,000 patients a year may benefit from the Rosetta Cancer Origin Test™, 60,000 from the Rosetta Mesothelioma Test™, 65,000 from the Rosetta Kidney Cancer Test™ and 226,000 patients from the Rosetta Lung Cancer Test™. The Company's assays are offered directly by Rosetta Genomics in the U.S., and through distributors around the world. For more information, please visit www.rosettagenomics.com. Parties interested in ordering the test can contact Rosetta Genomics at (215) 382-9000 ext. 309.

About Rosetta Genomics

Rosetta develops and commercializes a full range of microRNA-based molecular diagnostics. Founded in 2000, Rosetta's integrative research platform combining bioinformatics and state-of-the-art laboratory processes has led to the discovery of hundreds of biologically validated novel human microRNAs. Building on its strong patent position and proprietary platform technologies, Rosetta is working on the application of these technologies in the development and commercialization of a full range of microRNA-based diagnostic tools. Rosetta's cancer testing services are commercially available through its Philadelphia-based CAP-accredited, CLIA-certified lab. Frost & Sullivan recognized Rosetta Genomics with the 2012 North American Next Generation Diagnostics Entrepreneurial Company of the Year Award.

Forward-Looking Statement Disclaimer

Various statements in this release concerning Rosetta's future expectations, plans and prospects, including without limitation, Rosetta performing additional studies aimed at further examining the expression of identified miRNA biomarkers in various blood fractions, the role of miRNAs in cardiovascular development and physiological function as well as in the pathogenesis of a wide range of cardiac diseases including HF, the possibility of Rosetta launching new assays, including assays related to the field of heart failure, as well as the timeline for launching new assays, constitute forward-looking statements for the purposes of the safe harbor provisions under The Private Securities Litigation Reform Act of 1995. Actual results may differ materially from those indicated by these forward-looking statements as a result of various important factors, including those risks more fully discussed in the "Risk Factors" section of Rosetta's Annual Report on Form 20-F for the year ended December 31, 2012 as filed with the SEC. In addition, any forward-looking statements represent Rosetta's views only as of the date of this release and should not be relied upon as representing its views as of any subsequent date. Rosetta does not assume any obligation to update any forward-looking statements unless required by law.

Company Contact:

Rosetta Genomics
Ken Berlin, President & CEO
(609) 419-9003
investors@rosettagenomics.com

Investor Contacts:

LHA
Anne Marie Fields
(212) 838-3777
afields@lhai.com
or
Bruce Voss
(310) 691-7100
bvoss@lhai.com

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