News Release

Rosetta Genomics' microRNA-based assay for Thyroid Cancer Highlighted in Poster Presentation at 84th Annual Meeting of the American Thyroid Association

Data demonstrate that specific microRNAs are differentially expressed between benign and malignant thyroid lesions

PRINCETON, N.J., and REHOVOT, Israel (October 23, 2014) – Rosetta Genomics Ltd. (NASDAQ: ROSG), a leading developer and provider of microRNA-based molecular diagnostics, announces that data in support of the Company's microRNA-based assay for indeterminate thyroid nodules will be highlighted in a poster presentation entitled, *"MicroRNAs as a powerful diagnostic tool for thyroid nodule classification in pre-operative samples,"* at the upcoming 84th Annual Meeting of the American Thyroid Association (ATA) taking place from October 29th through November 2nd at the Hotel Del Coronado in Coronado, Calif.

The poster describes the integrated technology platform developed by Rosetta Genomics for profiling and characterizing microRNAs in various clinical samples including cytological samples, cell blocks and stained smears. Over 150 thyroid Fine Needle Aspirate (FNA) samples in cell blocks and stained smears were successfully processed and profiled using Rosetta's proprietary microarray platform measuring over 2000 microRNAs. Differential expression of microRNAs was found between benign and malignant neoplasms. In addition, next generation sequencing was performed on a set of 11 thyroid follicular resection samples in which 386 novel candidate microRNAs were found, 27 of them were also measured using qPCR.

The study concluded, "We demonstrated the feasibility of extracting and profiling miRNAs from cell blocks and smears stained with different cytological stains. We also identified novel microRNAs using proprietary small-RNA next generation sequencing, which may serve as new biomarkers for the classification of thyroid nodules. Using the expression levels of just two microRNAs, we can reach an accuracy of over 85% in discriminating benign from malignant thyroid nodules."

"We are delighted to have these supportive data presented at this year's ATA as it raises awareness of Rosetta's new microRNA-based thyroid cancer assay, which is currently under development and expected to launch in the third quarter of 2015, before an audience of clinicians who specialize in the diagnosis and treatment of thyroid disorders and thyroid cancer," stated Kenneth A. Berlin, President and Chief Executive Officer of Rosetta Genomics. "These data corroborate the results from our earlier studies, which have demonstrated that microRNA expression levels can differentiate malignant nodules from benign nodules, and also demonstrated the ability to extract and profile microRNAs from thyroid FNAs. We are in the process of conducting larger validation studies, as we plan for the launch of our thyroid assay in the U.S. in 2015."

An estimated 4% to 7% of the general population develops nodules in the thyroid that can be felt on examination, though fewer than 10% are malignant. The use of FNAs to obtain tissue for analysis is the standard biopsy technique for detecting thyroid cancer. It is estimated that nearly 500,000 FNAs are performed each year in the U.S. and approximately 740,000 are performed annually in Europe. Interpretation of thyroid FNA samples is not always straightforward, leading to an indeterminate result in up to 30% of the samples. Many patients with indeterminate results are sent to surgery as a precaution, despite the fact that the majority of these cases are benign. This exposes patients to unnecessary surgical risk, potential co-morbidities, and costs the system hundreds of millions of dollars.

About the American Thyroid Association

The American Thyroid Association (ATA) is the leading worldwide organization dedicated to the advancement, understanding, prevention, diagnosis, and treatment of thyroid disorders and thyroid cancer. ATA is an international membership medical society with over 1,700 members from 43 countries around the world. Celebrating its 91st anniversary, the ATA delivers its mission — of being devoted to thyroid biology and to the prevention and treatment of thyroid disease through excellence in research, clinical care, education, and public health — through several key endeavors: the publication of highly regarded professional journals, *Thyroid, Clinical Thyroidology*, and *VideoEndocrinology*; annual scientific meetings; biennial clinical and research symposia; research grant programs for young investigators, support of online professional, public and patient educational programs; and the development of guidelines for clinical management of thyroid disease and thyroid cancer. The ATA promotes thyroid awareness and information through its online Clinical Thyroidology for the Public (distributed free of charge to over 11,000 patients and public subscribers) and extensive, authoritative explanations of thyroid disease and thyroid cancer in both English and Spanish. The ATA website serves as the clinical resource for patients and the public who look for reliable information on the Internet.

About Rosetta Genomics

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 and therapeutics. Rosetta currently commercializes a full range of microRNA-based molecular diagnostics. Rosetta's cancer testing services are commercially available through its Philadelphia-based CAP-accredited, CLIA-certified lab. For more information, please visit www.rosettagenomics.com.

Forward-Looking Statement Disclaimer

Various statements in this release concerning Rosetta's future expectations, plans and prospects, including without limitation, statements relating to the utility of scientific data presented by Rosetta, the presentation of scientific data by Rosetta at the ATA, the development of a high-value thyroid cancer diagnostic and the expected timing of the launch of Rosetta's thyroid assay in the U.S., 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, 2013 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.

Rosetta Genomics 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

###

.