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Revealing Genomic Answers

News Release

Positive Performance Data from Validation Study of Rosetta Genomics' microRNA-based Diagnostic Assay for Thyroid Nodule Classification Presented at the International Thyroid Congress and Annual Meeting of the American Thyroid Association

98% Negative Predictive Value (NPV), 95% Sensitivity and 79% Specificity when three pathologists agree on reference diagnoses; 90% NPV overall

Launches RosettaGX Reveal™ at leading thyroid medical conference

PHILADELPHIA and REHOVOT, Israel (October 21, 2015) – Rosetta Genomics Ltd. (NASDAQ: ROSG), a leading developer and provider of microRNA-based and other molecular diagnostics, announces that performance and other data from the recently-completed, blinded validation study of its microRNA-based diagnostic assay for the classification of indeterminate thyroid nodules is being presented in a poster entitled *"A First-of-its-Kind, microRNA-based Diagnostic Assay for Accurate Thyroid Nodule Classification,"* at the 15th International Thyroid Congress (ITC) and 85th Annual Meeting of the American Thyroid Association (ATA). The meeting is taking place October 18-23, 2015 in Lake Buena Vista, Florida. The poster is being presented by Dganit Bar, Ph.D., Chief Scientific Officer of Rosetta Genomics, and Eti Meiri, Ph.D., Vice President of Research of Rosetta Genomics, on Wednesday, October 21st at 9:20 a.m. Eastern time during a poster presentation session taking place at the Atlantic Hall, Dolphin Building of the Walt Disney World Swan and Dolphin Resort (Orlando). The poster can be accessed here.

Branded as RosettaGX Reveal™ and being launched at the ITC/ATA, this simple and reliable diagnostic assay offers a valuable tool for the classification of pre-operative thyroid samples, including those that are presently indeterminate according to cytological evaluation, and is the only assay that can utilize cytology smears. This assay is the first commercial test that interrogates the same thyroid cells that the cytopathologist viewed for the initial indeterminate diagnosis.

The multicenter blinded validation study was conducted on 203 Fine Needle Aspiration (FNA) smears collected from centers in the U.S., Europe and Israel. 192 (94.6%) passed quality assurance (QA) measures. The samples were processed according to standard operating procedures by personnel blinded to the reference diagnosis, and classifications were automatically generated by a dedicated software algorithm.

Performance data from the study showed that where final diagnosis was unanimously confirmed by three pathologists (n=159), the highest standard reference diagnoses, RosettaGX Reveal demonstrated a Sensitivity of 95%, Specificity of 79%, Negative Predictive Value (NPV) of 98% and Positive Predictive Value (PPV) of 63%.

The overall sample set (n=203 before QA; 192 following QA), where the final diagnoses were agreed to by at least two pathologists, demonstrated a Sensitivity of 84%, Specificity of 72%, NPV of 90% and PPV of 60%.

Commenting on the validation data and the introduction of RosettaGX Reveal, Nicole Massoll, M.D., Medical Director of Cytopathology at the University of Arkansas for Medical Sciences and a medical director for FNApath Laboratories, said, These performance data are very impressive, especially with regard to the NPV of 98% achieved for the samples for which three expert pathologists agreed on the final diagnosis. A high NPV is important because patients with indeterminate nodules are often referred to surgery, though most of these nodules prove to be benign. In addition to its performance, we look forward to using RosettaGX Reveal because we can work off the same cytology slides that were created to perform the initial diagnosis, thus eliminating the risks, morbidity and unnecessary pain associated with a second fine needle passage into the patient's neck, and also allowing Rosetta's test to be run on the same cells we have already examined."

"We are delighted to be introducing our RosettaGX Reveal test before an audience of the world's leading thyroid disease experts. We are particularly pleased with the outstanding performance data of our diagnostic assay as it demonstrates significant improvement over currently available tests. Moreover, RosettaGX Reveal is the only currently available assay that can be run on very small samples and smears. This flexibility, coupled with superior clinical performance, should provide considerable competitive advantage as we launch RosettaGX Reveal into an annual market valued at $350 million in the U.S. alone," said Douglas Sites, Executive Vice President, Sales and Marketing for Rosetta Genomics.

"We believe RosettaGX Reveal is an exceptionally competitive product compared with currently marketed assays, and we look forward to submitting these positive data for publication in a leading peer-reviewed journal by the end of this year. The results of our validation study once again demonstrate the power of microRNAs as biomarkers and show exceptional assay performance when our microRNA-based testing results are compared with the highest standard reference diagnoses. We remain confident this will be an important product for our portfolio as practice guidelines already recognize the value of molecular profiling in cases where the initial diagnoses for an FNA thyroid smear is indeterminate. This fact, combined with the obvious health economic benefits this test will bring by avoiding unnecessary surgeries, creates prime market conditions that should encourage market adoption. In addition, this assay has the potential to provide benefits to patients with thyroid nodules as it can help ensure that their condition is handled most appropriately," said Kenneth A. Berlin, President and Chief Executive Officer of Rosetta Genomics.

"In addition to the clinical benefits and competitive performance of RosettaGX Reveal, our recently announced partnership with FNApath provides physicians initially testing their patients for thyroid cancer with the option of using a pathologist or laboratory of their own choosing, or FNApath, a centralized laboratory with an expertise in diagnosing thyroid cancer. Currently, the market-leading test for indeterminate thyroid cancer FNAs in most cases requires physicians to send patient FNA samples to that company's designated centralized laboratory, thereby preventing physicians from working with the local pathologist of their choice, and in the case of an indeterminate result, requiring two additional FNA samples be drawn in order to run their test," added Mr. Berlin.

About Rosetta Cancer Testing Service

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). 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. In the U.S. alone, Rosetta Genomics estimates that 150,000 patients a year may benefit from the Rosetta Cancer Origin Test™, 62,000 patients a year from the Rosetta Kidney Cancer Test™, 222,000 patients a year from the Rosetta Lung Cancer Test™ and 150,000 patients a year from RosettaGX Reveal™ for indeterminate thyroid FNAs. The Company's assays are offered directly by Rosetta Genomics in the U.S., and through distributors around the world. In addition to its proprietary products, the Company markets the RosettaGX OncoGxOne, OncoGxLung, PGxOne™ and EGFR and KRAS tests for Admera Health. With the acquisition of PersonalizeDx in April 2015, the Company now offers a broader menu of molecular and other assays for bladder, lung, prostate and breast cancer patients. For more information, please visit www.rosettagenomics.com. Parties interested in ordering any of these tests can contact Rosetta Genomics at (215) 382-9000 ext. 309.

About Rosetta Genomics

Rosetta develops and commercializes a full range of microRNA-based and other molecular diagnostics. 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. Through the acquisition of PersonalizeDx, the Company offers core FISH, IHC and PCR-based testing capabilities and partnerships in oncology and urology that provide additional content and platforms that complement the Rosetta offerings. Rosetta's and PersonalizeDx's cancer testing services are commercially available through the Philadelphia, PA- and Lake Forest, CA-based CAP-accredited, CLIA-certified labs, respectively. For more information visit www.rosettagenomics.com.

Forward-Looking Statement Disclaimer

Various statements in this release concerning Rosetta's future expectations, plans and prospects, including but not limited to statements relating to Rosetta's RosettaGX Reveal assay improving on currently available tests, the sensitivity, specificity, positive and negative predictive values of Rosetta's RosettaGX Reveal assay, the value of the market for RosettaGx Reveal, the submission of the aforementioned data for publication, the health economic benefits that RosettaGx Reveal will bring, the competitive advantages and market conditions that should encourage market adoption of RosettaGx Reveal, and that RosettaGx Reveal will become an important part of Rosetta's product portfolio 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, 2014 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 Contacts:
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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