News Release

Rosetta Genomics Issues Letter to Shareholders

PRINCETON, N.J. and REHOVOT, Israel (January 12, 2015) – Rosetta Genomics Ltd. (NASDAQ: ROSG), a leading developer and provider of microRNA-based molecular diagnostics, announces the posting of the following Letter to Shareholders from President and Chief Executive Officer Kenneth A. Berlin to the Investors section of the Company's website at www.rosettagenomics.com.

Dear Fellow Shareholders:

As we begin the New Year, I would like to express my appreciation to all our shareholders for the trust and support you have given Rosetta Genomics as we continue to build upon our microRNA platform technology to strengthen our leading position in the growing field of molecular diagnostics and genomics.

Throughout 2014 we made significant progress advancing our three key areas for growth: **current product sales, new product development** and **third-party collaborations**.

We are particularly pleased with the progress we have made in growing **current product sales**. Last year we strengthened our commercial leadership team with the addition of key hires to drive demand and secure reimbursement, with considerable success in both areas. We expect revenue for the second half of 2014 to be approximately **40% higher** compared with the first half of 2014, and to be **more than three times** the revenue we recorded in the second half of 2013. While we are still in the early stages of our full commercialization efforts and these increases are off a modest base, the growth and trends demonstrate that our strategy and marketing programs are bearing fruit as we continue to progress our microRNA-based solutions for oncology.

In addition to our current commercial products, we **expanded our product portfolio** with the recent collaboration with Admera Health for the commercialization of current and future sequencing-based oncology tests. We entered 2015 with the launch of the first of these products and are now offering PGxOne™, a pharmacogenomics test that predicts a patient's response to drugs based on personal genetic makeup to avoid adverse effects; and *EGFR* and *KRAS* clinical sequencing, which provides genomic analysis of those tumor-based mutations from patient tissue to provide clinically relevant information relating to potential response to therapy, which is helpful for physicians, pathologists and researchers. These new products are synergistic with our current suite of oncology testing services, expand our call point to hospital-based pharmacies and should begin to contribute to our growing revenue stream in the first half of 2015.

We continue to **expand our pipeline of novel microRNA-based solutions** with the addition of new indications for diagnostic issues in the areas of thyroid and bladder cancer, as well as the most recent addition to our pipeline, endometrial cancer.

The first of these is our product line in the area of thyroid cancer. The first indication we are pursuing in this area is for the differential diagnosis of indeterminate Fine Needle Aspirates (FNAs) from thyroid nodules, which can reduce unnecessary surgeries and their associated costs and complications. We are pleased to report we are on track to launch this assay by the end of the third quarter of this year. We anticipate that this assay will be competitive with current alternatives. We believe our specimen collection process will be a competitive differentiator, as it is expected to utilize the actual smear used by the cytologist as opposed to taking additional FNAs and preserving them in specialized tubes. That latter approach is required by some currently marketed thyroid tests, which were expected to generate sales of $45-$50 million in 2014. Importantly, we will soon begin validation studies and are on track to launch our microRNA-based thyroid neoplasia assay in the third quarter of 2015. We believe this will be an

important product for our portfolio as earlier competitors have already established the market, and since up to 30% of FNAs yield indeterminate results. The resulting U.S. opportunity alone exceeds $350 million.

We continue to work to advance our bladder cancer assay for the risk stratification of Non-muscle-invasive bladder cancer (NMIBC) patients. Risk stratification in NMIBC is necessary to identify patients at high risk for progression to invasive bladder cancer so that life-saving interventions can be implemented, and to classify low-risk patients in order to avoid invasive and unnecessary procedures and follow-ups. This is particularly important, as 70%-80% of bladder cancers are considered to be of the NMIBC type. We have two foundational studies already completed and published that demonstrate the role of microRNAs for risk stratification in bladder cancer. We plan to initiate an additional study this year and expect to launch this new assay by the end of 2016.

We are also working to develop the newest addition to our product portfolio, an assay for the preoperative risk stratification of endometrial cancer patients. Nearly 53,000 cases of endometrial cancer were diagnosed in 2014. Better preoperative risk assessment is needed for improved planning of the surgical procedure and, more specifically, for identifying patients who may benefit from lymph node dissection and low risk patients for whom lymphadenectomy could be omitted, thereby averting unnecessary morbidity. We will undertake proof-of-concept studies in 2015 and expect to advance this potentially high-value diagnostic assay thereafter.

In 2014, we were particularly successful in securing and advancing **third-party collaborations** as we build on efforts to further monetize our leading microRNA biomarker platforms. We opened 2014 with the announcement of a master service provider agreement with an undisclosed major global biopharmaceutical company. Here, we are using our cutting-edge microRNA expertise and capabilities to assist one of the world's leading biopharmaceutical companies to advance their research and development efforts in an important, novel therapeutic approach in an area of unmet medical need. We have completed the feasibility phase of this agreement and moved to the next stage of this collaboration, which recently began to generate revenues.

In April 2014 we established a strategic alliance with Marina Biotech, a leading nucleic acid-based drug discovery and development company focused on rare diseases, to jointly identify and develop microRNA-based products designed to diagnose and treat various neuromuscular diseases and dystrophies. We recently reported initiation of the first of these projects, which is a clinical study conducted by Rosetta Genomics to identify novel microRNA candidates for the treatment of Duchenne Muscular Dystrophy. We are very excited about the potential of this project to identify specific microRNA signatures to identify therapeutic candidates for Marina Biotech to develop as potential new treatment options for this disease, which typically afflicts young boys.

Finally, we entered into a three-year alliance with Moffitt Cancer Center, a National Cancer Institute-designated Comprehensive Cancer Center, to discover, develop and commercialize a variety of microRNA-based cancer diagnostics and to stimulate new projects and collaborations for the development of diagnostics in areas of unmet medical need. Rosetta will provide funding for Moffitt investigator-initiated projects that align with Rosetta's strategic priorities.

We continue to pursue additional strategic partnerships that will allow us to leverage our cutting-edge microRNA platforms and capabilities, and expect that over time these will be significant drivers of value. In addition, we continue to evaluate the acquisition or licensure of other diagnostic and sequencing products in order to leverage the investments we are making in our commercial infrastructure and to accelerate revenue growth. The collaboration with Admera is one such example.

We remain vigilant in continuing to build and strengthen our intellectual property, and are pleased to have added three U.S. patents to our growing portfolio during 2014. As a result we now have 39 issued patents, including 35 in the U.S. In addition we have 49 patent applications pending, of which 28 are in the U.S. These issued patents and applications protect the specific microRNAs used in our products and cover composition of matter, diagnostic applications, therapeutic applications and discovery process applications for microRNAs in humans. This leading patent position provides access to hundreds of

potential microRNA biomarkers and offers the potential for multiple opportunities for research, development and commercial partnerships. We remain a leading pioneer of microRNA technology and our broad and expanding patent portfolio will continue to fortify our leadership position as the vast potential of microRNA technologies is realized.

We are very pleased with the progress we have made and expect 2015 to be an exciting year of growth and accomplishments as we advance our strategic plan in pursuit of our mission to be the pioneering force in microRNA-based personalized medicine to the benefit of patients worldwide.

On behalf of my colleagues and our Board of Directors, thank you for your continued support of Rosetta Genomics.

Sincerely,

Kenneth A. Berlin
President and Chief Executive Officer

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

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 that Rosetta expects expect revenue for the second half

of 2014 to be approximately 40% higher compared with the first half of 2014, and to be more than three times the revenue we recorded in the second half of 2013, that Rosetta's marketing of the PGxOne™, EGFR and KRAS tests will contribute to its revenue stream in the first half of 2015, that Rosetta's thyroid neoplasia assay will be launched in the third quarter of 2015 and that such assay will be competitive with current alternatives, that Rosetta expects to launch the bladder cancer assay by the end of 2016, that Rosetta will undertake proof-of-concept studies for the assay for the preoperative risk stratification of endometrial cancer patients in 2015 and advance this assay thereafter, that additional strategic partnerships will be significant drivers of value, and that 2015 will be an exciting year of growth and accomplishments, 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.

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