News Release

Rosetta Genomics and Marina Biotech Initiate First Clinical Project Under Strategic Alliance

Clinical Study Intended to Identify Novel microRNA Candidates for the Treatment of Duchenne Muscular Dystrophy

PRINCETON, N.J., REHOVOT, Israel and BOTHELL, WA (November 18, 2014) – Rosetta Genomics Ltd. (NASDAQ: ROSG), a leading developer and provider of microRNA-based molecular diagnostics and therapeutics, and Marina Biotech, Inc. (OTCQB: MRNA), a leading nucleic acid-based drug discovery and development company focused on rare diseases, jointly announced the initiation of the first project under the Strategic Alliance the companies announced on April 2, 2014. The first project will be a clinical study conducted by Rosetta Genomics to identify novel microRNA candidates for the treatment of Duchenne Muscular Dystrophy (DMD).

In this study, Rosetta will evaluate archived muscle biopsy samples from 10-30 DMD patients and 10-30 non-DMD controls. The samples will be processed and assessed by Rosetta's microarray platform. Samples will also be profiled using deep sequencing to identify novel microRNAs and isomiRs.

"We are excited to initiate our strategic agreement with Marina Biotech on this important project in DMD, as it is a debilitating disease of significant unmet need," stated Kenneth A. Berlin, President and Chief Executive Officer of Rosetta Genomics. "We look forward to leveraging our microRNA biomarker platform for the discovery of specific microRNA signatures in DMD to identify therapeutic candidates for Marina Biotech to develop as potential new treatment options for these young boys suffering with DMD."

"We want to ensure we are capitalizing on our broad nucleic acid drug discovery platform by identifying all possible therapeutic approaches to the treatment of DMD," stated J. Michael French, President and Chief Executive Officer of Marina Biotech. "With the breadth of our chemistry and delivery capability, we can certainly pursue a specific exon-skipping approach as is currently in clinical development. However, we can also pursue novel compounds directed at inhibiting or replacing those microRNA targets that might have a much broader impact in treating the major symptoms of this disease. The experience and capability of Rosetta Genomics is unparalleled and we look forward to working with them in this important clinical study."

About Duchenne Muscular Dystrophy
Duchenne Muscular Dystrophy (DMD) is a genetic disorder characterized by progressive muscle degeneration and weakness. It is one of nine types of muscular dystrophy. DMD is caused by an absence of dystrophin, a protein that helps keep muscle cells intact. Symptom

onset is in early childhood, usually between ages 3 and 5. The disease primarily affects boys, but in rare cases it can affect girls. DMD occurs in about 1 out of every 3,600 male infants. Because this is an inherited disorder, risks include a family history of DMD.

About Marina Biotech, Inc.
Marina Biotech is an oligonucleotide therapeutics company with broad drug discovery technologies providing the ability to develop proprietary single and double-stranded nucleic acid therapeutics including siRNAs, microRNA mimics, antagomirs, and antisense compounds, including messenger RNA therapeutics. These technologies were built via a roll-up strategy to discover and develop different types of nucleic acid therapeutics in order to modulate (up or down) a specific protein(s) which is either being produced too much or too little thereby causing a particular disease. We believe that the Marina Biotech technologies have unique strengths as a drug discovery engine for the development of nucleic acid-based therapeutics for rare and orphan diseases. Further, we believe Marina Biotech is the only company in the sector that has a delivery technology in human clinical trials with differentiated classes of payloads, through licensees ProNAi Therapeutics and Mirna Therapeutics, delivering single-stranded and double-stranded nucleic acid payloads, respectively. Our novel chemistries and other delivery technologies have been validated through license agreements with Roche, Novartis, Monsanto, and Tekmira. The Marina Biotech pipeline currently includes a clinical program in Familial Adenomatous Polyposis (a precancerous syndrome) and a preclinical program in myotonic dystrophy. Marina Biotech's goal is to improve human health through the development of RNAi- and oligonucleotide-based compounds and drug delivery technologies that together provide superior therapeutic options for patients. Additional information about Marina Biotech is available at www.marinabio.com.

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.

Marina Biotech Forward-Looking Statements

Statements made in this news release may be forward-looking statements within the meaning of Federal Securities laws that are subject to certain risks and uncertainties and involve factors that may cause actual results to differ materially from those projected or suggested. Factors that could cause actual results to differ materially from those in forward-looking statements include, but are not limited to: (i) the ability of Marina Biotech to obtain additional funding; (ii) the ability of Marina Biotech to attract and/or maintain manufacturing, research, development and commercialization partners; (iii) the ability of Marina Biotech and/or a partner to successfully complete product research and development, including preclinical and clinical studies and commercialization; (iv) the ability of Marina Biotech and/or a partner to obtain required governmental approvals; and (v) the ability of Marina Biotech and/or a partner to develop and commercialize products prior to, and that can compete favorably with those of, competitors. Additional factors that could cause actual results to differ materially from those projected or suggested in any forward-looking statements are contained in Marina Biotech's most recent filings with the Securities and Exchange Commission. Marina Biotech assumes no obligation to update or supplement forward-looking statements because of subsequent events.

Rosetta Forward-Looking Statement Disclaimer

Various statements in this release concerning Rosetta's future expectations, plans and prospects, including without limitation, statements relating to Rosetta leveraging its microRNA biomarker platform to identify therapeutic candidates for Marina Biotech to develop as potential new treatment options for DMD, 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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