News Release

ROSETTA GENOMICS™
expanding personalized medicine

Rosetta Genomics Reports Financial Results for the First Half of 2014

Demand for microRNA oncology testing services continues its momentum with gross billings growing three-fold, Company executes four research collaborations and advances broad pipeline of microRNA-based assays

Business Update Conference Call to be held September 18th at 10:00 a.m. Eastern time

PRINCETON, N.J. and REHOVOT, Israel (September 17, 2014) – Rosetta Genomics Ltd. (NASDAQ: ROSG), a leading developer and provider of microRNA-based molecular diagnostics, today reported financial results for the six months ended June 30, 2014.

Highlights for the first half of 2014 and recent weeks include:

- Continued to enhance awareness of and demand for the Rosetta Cancer Origin Test™, which resulted in 187% increase in revenues to $554,000 for the first half of 2014 from $193,000 for the first half of 2013 and have already surpassed by 37% the revenues for the entire 2013 year, with commercial initiatives continuing to gain momentum.
- Recorded gross billings for the first half of 2014 of $1.3 million, more than triple the $417,000 recorded in the first half of 2013 and have already surpassed by 20% the gross billings for the entire 2013 year.
- Strengthened commercial leadership with the addition of Doug Sites as Executive Vice President of Sales and Marketing and Kevin Watson as Director, Reimbursement-Managed Care.
- Advanced development of its thyroid neoplasia assay, which is expected to launch in the third quarter of 2015 and selected bladder cancer as the next oncology diagnostic to be developed with an expected launch in 2016.
- Executed four collaborative agreements, including a:
    - Master service provider agreement with an undisclosed major global biopharmaceutical company under which Rosetta will provide its microRNA profiling and other services in important areas of unmet medical need;
    - Strategic alliance with Marina Biotech to jointly develop microRNA-based diagnostics and therapeutics for rare diseases;
    - Agreement with a global pharmaceutical company to advance efforts in Alzheimer's disease diagnostics; and
    - Strategic alliance with Moffitt Cancer Center to discover, develop and commercialize a variety of microRNA-based cancer diagnostics.
- Received three U.S. patents that cover the Company's microRNA-based technology as a treatment for ovarian cancer, for the prognosis and treatment of prostate cancer and for the method of use of a core element of the Cancer Origin Test.

Management Commentary

"The first half of 2014 was a particularly productive period for Rosetta Genomics as we made meaningful advances across the three key areas for growth, namely current product sales, new product development and third-party collaborations," said Kenneth A. Berlin, President and Chief Executive Officer of Rosetta Genomics.

"We recorded significant growth in product revenues year-over-year, underscoring the momentum of our sales and marketing efforts. To fortify our commercial strategy and enhance market adoption, we strengthened our leadership team with the addition of key hires to drive demand and reimbursement.

"Our clinical development programs continued to advance and we are on track to publish proof-of-concept data for our thyroid neoplasia assay by the end of the year. These data and other information are expected to highlight the advantages of our assay compared with current alternatives. Our specimen collection process will be a competitive differentiator, as it can utilize the actual smear used by the cytologist as opposed to taking additional Fine Needle Aspirates and preserving them in specialized tubes as is now required by currently marketed thyroid tests. Importantly, we remain on track to begin final validation testing in early 2015 and to launch our microRNA-based thyroid neoplasia assay in the third quarter of 2015.

"We are also advancing our previously published discovery work in bladder cancer into the development phase to achieve a microRNA-based diagnostic for better therapeutic guidance of patients with bladder cancer. We have two published studies relating to an assay for bladder cancer risk of invasiveness, which give us the confidence to move forward with additional feasibility and validation studies, with an aim for commercial launch in 2016. In addition, we will continue to explore additional oncology indications through early proof-of-concept studies in 2015.

"We are especially pleased with our progress with third-party collaborations. These alliances allow us to leverage our leading microRNA biomarker platform into both the diagnostics and therapeutics arenas, and have the potential to be significant contributors to long-term value creation. Specifically, we have successfully completed the feasibility phase of our master service agreement with an undisclosed global biopharmaceutical company and are now advancing to the next stage of this collaboration, which is expected to generate revenues by the end of 2014. In addition, we have initiated proof-of-concept studies with our global pharmaceutical partner to advance the development of an assay for the earlier detection of Alzheimer's disease which could have applications both as a diagnostic as well as for patient selection for clinical trials.

"We further strengthened our patent portfolio with the addition of three U.S. patents in various cancer indications. In addition to protecting our products from would-be competitors, these patents support our leading patent position in microRNA technology, specifically in oncology," concluded Mr. Berlin.

Financial results for the six months ended June 30, 2014 include:

- For the first half of 2014 the Company recorded revenues from continuing operations of $554,000, up 187% from revenues of $193,000 for the first half of 2013.
- Cost of revenues for the first six months of 2014 increased to $770,000 from $434,000 for the first six months of 2013, primarily due to higher volume of processed samples as well as increases in personnel and infrastructure to meet current and anticipated sample volume.
- Research and development expenses for the first half of 2014 increased to $1.0 million from $877,000 for the first half of 2013, primarily due to increases in headcount and lab materials to create and advance the Company's expanded pipeline of R&D projects.
- Marketing and business development expenses for the first half of 2014 decreased to $3.4 million from $3.6 million in the prior-year period, as the Company maintained its ongoing investment in U.S. commercialization efforts as well as business development initiatives to procure collaborative and/or licensing agreements.
- General and administrative expenses for the first six months of 2014 were $2.6 million compared with $2.0 million for the same period in 2013, with the increase primarily due to higher overhead as the Company added key executives and other personnel.
- The operating loss for the first half of 2014 was $7.2 million, including $471,000 of non-cash stock-based compensation expense. This compares with an operating loss for the first half of 2013 of $6.7 million, including $467,000 of non-cash stock-based compensation expense.
- The net loss after discontinued operations for the first six months of 2014 was $7.2 million, or $0.66 per ordinary share on 10.8 million shares outstanding, compared with a net loss after discontinued operations for the same period in 2013 of $6.3 million, or $0.68 per ordinary share on 9.2 million shares outstanding.
- On a non-GAAP basis, excluding stock-based compensation expense and income/loss from revaluation of warrants, which are presented as a liability on the balance sheet, the net loss for the first six months of 2014 was $6.7 million, or $0.62 per ordinary share, compared with a net loss for the first six months of 2013 of $5.9 million, or $0.64 per ordinary share.

Details reconciling non-GAAP amounts with GAAP amounts are provided below.

Balance Sheet Highlights

As of June 30, 2014, Rosetta Genomics had $19.8 million in cash and cash equivalents, restricted cash and short-term bank deposits, compared with $24.5 million as of December 31, 2013. The Company used approximately $7.5 million in cash to fund operations during the first six months of 2014. During the first half of 2014 the Company raised net proceeds of $3.0 million from the sale of approximately 750,000 ordinary shares through the previously announced Sales Agreements with Cantor Fitzgerald & Co.

Cash Guidance

Throughout the balance of 2014 Rosetta Genomics plans to continue to invest in the expansion of its U.S. commercial operations and to fund further clinical development of its microRNA technology. As a result, the Company estimates that total net cash requirements to fund operations for the 2014-year will be between $14 million and $15 million, which includes the $7.5 million in net cash used to fund operations for six months ended June 30, 2014. Rosetta Genomics believes that its cash balance as of June 30 2014, combined with projected revenue growth, will be sufficient to fund operations into 2016.

Conference Call

Rosetta Genomics management will host a conference call on September 18, 2014 at 10:00 a.m. Eastern time to discuss these financial results and recent corporate developments, and to answer questions. Individuals interested in listening to the conference call may do so by dialing (866) 239-5859 from within the U.S. or (702) 495-1913 from outside the U.S. The conference ID number is 2341327.

A telephone replay will be available through September 24, 2014 by dialing (855) 859-2056 from within the U.S. or (404) 537-3406 from outside the U.S., and entering the Conference ID number 2341327. The webcast will be available for 30 days following the completion of the call.

A live audio webcast of the call will also be available in the "Investors" section of the Company's website at www.rosettagenomics.com. An archived webcast will be available on the Company's website for 30 days beginning approximately two hours after the event.

Use of Non-GAAP Financial Measures

This press release contains certain non-GAAP financial measures. A "non-GAAP financial measure" refers to a numerical measure of historical or future financial performance, financial position or cash flows that excludes (or includes) amounts that are included in (or excluded from) the most directly comparable measure calculated and presented in accordance with GAAP in the financial statements. In this release, Rosetta provides gross billings, non-GAAP net loss and non-GAAP net loss per share data as additional information relating to its operating results. The presentation of this additional information is not meant to be considered in isolation or as a substitute for net loss or net loss per share prepared in accordance with GAAP.

Pursuant to the requirements of Regulation G promulgated by the SEC, the Company has provided a reconciliation of each non-GAAP financial measure used in this earnings release and related conference call or webcast to the most directly comparable financial measure prepared in accordance with GAAP. This reconciliation is presented in the tables below under the heading "Reconciliation of GAAP to Non-GAAP Consolidated Statement of Operation." Investors are encouraged to review these reconciliations to ensure they have a thorough understanding of the reported non-GAAP financial measures and their most directly comparable GAAP financial measures.

Management uses these non-GAAP measures for internal reporting and forecasting purposes. The Company has provided these non-GAAP financial measures in addition to GAAP financial results because it believes that these non-GAAP financial measures provide useful information to certain investors and financial analysts for comparison across accounting periods not

influenced by certain non-cash items that are not used by management when evaluating the Company's historical and prospective financial performance.

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). The 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.

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, the anticipated timing of Rosetta's clinical development programs, including its thyroid neoplasia assay and its bladder cancer diagnostic, the potential of Rosetta's third-party collaborations to be significant contributors to long-term value creation, Rosetta's plans to continue to invest in the expansion of its U.S. commercial operations and to fund further clinical development of its microRNA technology, that the master service agreement with an undisclosed global biopharmaceutical company is expected to generate revenues by the end of 2014, Rosetta's estimate that total net cash requirements to fund operations for the 2014-year will be between $14 million and $15 million and that Rosetta's cash balance of $19.8 million as of June 30, 2014, combined with projected revenue growth, will be sufficient to fund operations into 2016, 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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-Tables to Follow-

USD in thousands	Six Months ended June 30, 2014	2013
Net loss after discontinued operations	$ 7,184	$ 6,293
Stock-based compensation	471	467
Revaluation of warrants related to share purchase agreement	(22)	(56)
non-GAAP net loss	**$ 6,735**	**$ 5,882**

Basic and diluted per share data	Six Months ended June 30, 2014	2013
Net loss after discontinued operations	$ 0.66	$ 0.68
Stock-based compensation	0.04	0.05
Revaluation of warrants related to share purchase agreement	(0.00)	(0.01)
non-GAAP net loss	**$ 0.62**	**$ 0.64**
Weighted average number of Ordinary shares used to compute basic net loss per Ordinary share	10,806,738	9,215,175

	Six months ended June 30, 2014	2013
Revenues	$ 553,779	$ 193,012
Unrecognized billings	757,910	223,499
Gross billings	$ 1,311,689	$ 416,511

	Year ended December 31, 2013
Revenues	$ 405,323
Unrecognized billings	685,965
Gross billings	$ 1,091,288

CONDENSED INTERIM CONSOLIDATED BALANCE SHEETS
U.S. dollars in thousands

	June 30, 2014	December 31, 2013
	Unaudited	
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 9,057	$ 16,774
Restricted cash	59	24
Short-term bank deposits	10,670	7,667
Trade receivables	444	224
Other accounts receivable and prepaid expenses	645	309
Total current assets	20,875	24,998
LONG-TERM ASSETS:		
Long-term account receivable	8	8
Property and equipment, net	790	874
Total long-term assets	798	882
Total assets	$ 21,673	$ 25,880

	June 30, 2014	December 31, 2013
	Unaudited	
LIABILITIES AND SHAREHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Trade payables	$ 752	$ 906
Other accounts payable and accruals	758	1,032
Total current liabilities	1,510	1,938
LONG-TERM LIABILITIES:		
Warrants related to share purchase agreements	59	81
Deferred revenue	228	228
Total long-term liabilities	287	309
COMMITMENTS AND CONTINGENCIES		
SHAREHOLDERS' EQUITY:		
Share capital: Ordinary shares of NIS 0.6 par value: 40,000,000 shares authorized at June 30, 2014 and December 31, 2013; 11,234,720 (unaudited) and 10,473,488 shares issued at June 30, 2014 and December 31, 2013, respectively; 11,231,462 (unaudited) and 10,470,230 shares outstanding at June 30, 2014 and December 31, 2013, respectively	1,739	1,609
Additional paid-in capital	133,720	130,423
Accumulated deficit	(115,583)	(108,399)
Total shareholders' equity	19,876	23,633
Total liabilities and shareholders' equity	$ 21,673	$ 25,880

CONDENSED INTERIM CONSOLIDATED STATEMENTS OF LOSS
U.S. dollars in thousands (except share and per share data)

	Six months ended June 30,	
	2014	**2013**
	Unaudited	
Revenues	$ 554	$ 193
Cost of revenues	770	434
Gross loss	216	241
Operating expenses:		
Research and development, net	1,011	877
Marketing and business development	3,393	3,563
General and administrative	2,620	1,989
Total operating expenses	7,024	6,429
Operating loss	7,240	6,670
Tax expenses	8	-
Financial income, net	64	104
Loss from continuing operations	7,184	6,566
Net income from discontinued operations	-	273
Net loss after discontinued operations	$ 7,184	$ 6,293
Basic and diluted net loss per ordinary share from continuing operations attributable to Rosetta Genomics' shareholders	$ 0.66	$ 0.71
Basic and diluted net income per ordinary share of discontinued operations attributable to Rosetta Genomics' shareholders	$ -	$ (0.03)
Basic and diluted net loss per ordinary share attributable to Rosetta Genomics' shareholders	$ 0.66	$ 0.68
Weighted average number of ordinary shares used to compute basic net loss per ordinary share	10,806,738	9,213,633
Weighted average number of ordinary shares used to compute diluted net loss per ordinary share	10,806,738	9,215,175