News Release

Rosetta Genomics Reports 2010 Fourth Quarter and Full Year Financial Results

Plans to Hire Independent Sales Representatives in the U.S.
Conference Call Scheduled for Thursday, April 7th at 10:00 a.m. Eastern Time

PHILADELPHIA and REHOVOT, Israel (April 4, 2011) – Rosetta Genomics, Ltd. (NASDAQ: ROSG), a leading developer of microRNA-based molecular diagnostics, today announced that it reported financial results for the three and 12 months ended December 31, 2010. Results for the 12 months ended December 31, 2011 were also previously reported on the Company's Annual Report on Form 20-F filed with the U.S. Securities and Exchange Commission on March 31, 2011.

Highlights since the announcement of the Company's third quarter financial results on November 30, 2010 include:

- Launched miRview™ mets² (pronounced "miRview mets two"), a microRNA-based test that identifies the primary origin of tumors of uncertain or unknown origin. This advanced test offers physicians and patients a larger panel of 42 tumors that can be identified, an increase from the 25 tumors that can be identified in the previous version of the test.
- Appointed Brian A. Markison, former Chairman and CEO of King Pharmaceuticals, to the Company's Board of Directors. Mr. Markison's impressive experience, particularly in oncology, as well as his network within the pharmaceutical industry is expected to be of great value as the Company launches U.S. commercial operations for its microRNA diagnostics.
- Obtained New York State Department of Health's Clinical Laboratory Permit, which approves the Company's entire miRview suite of diagnostic products for residents of New York State. miRview tests are now available in all 50 U.S. states.
- Received an advanced payment of $131,000 from the Office of the Israeli Chief Scientist in connection with the Company's participation in the Rimonim pharmaceutical consortium, the goal of which is to bring together leading Israeli biotechnology companies in order to advance RNAi-based therapeutics.
- Signed three new agreements for the development and validation of microRNA based diagnostics for various indications related to its Gen 3 products with Tel Hashomer Medical Research Infrastructure and Services Ltd., Carmel Medical Center, and Rabin Medical Center – Belinson Campus, all in Israel.

y entitled "Accurate Classification of Metastatic Brain roRNA-Based Test," were published in the print and online editions of *The Oncologist*, and showed that miRview™ mets is a powerful tool to guide diagnosis of metastatic brain and spine cancer cases.

- Strengthened its balance sheet with net proceeds of $2.2 million from a private placement in December 2010 and net proceeds of $5.5 million from concurrent private placement and registered direct offerings in February 2011.
- Announced the closing of an initial public offering (IPO) in Israel of its majority-owned subsidiary, Rosetta Green, which raised gross proceeds of 21,900,960 NIS ($6.06 million). Following the IPO, Rosetta Genomics holds a 50.03% equity ownership position in Rosetta Green.
- Regained compliance with the stockholders' equity requirement for continued listing on The NASDAQ Capital Market.

Management Commentary

"2010 was a challenging but rewarding year for Rosetta Genomics, marked by achievements in a number of important areas. We streamlined our operations and cost structure, expanded our distribution into Greece, advanced miRview mets² to commercial launch, fortified our patent portfolio and, importantly, regained U.S. rights to our first three commercial microRNA diagnostic tests. Moreover, we significantly expanded our scientific and clinical body of knowledge with multiple journal publications of data demonstrating the role of Rosetta's microRNA technology as a potentially powerful biomarker and diagnostic tool," said Kenneth A. Berlin, President and Chief Executive Officer of Rosetta Genomics.

"We are very excited about our new strategic direction for U.S. commercial operations. We are in the process of recruiting four to five independent sales representatives with an oncology focus to launch our microRNA-based diagnostic tests in several key oncology markets on the East coast. Our strategy is to focus our resources on commercializing our miRview mets tests as they address am important unmet medical need and largest, near term market opportunity. Approximately one third of all cancer patients are diagnosed with metastases, and a large proportion of those cases may have metastases whose primary origin is uncertain even after extensive testing. The use of miRview mets and mets² may assist physicians to rule out or rule in several suspected origins, as well as offer physicians new origins to explore. Identifying the primary cancer is becoming more important as an increasing number of targeted treatment options specific to certain cancers and tumor types have become available for use by treating clinicians.

"As a result of our initial commercial focus on the miRview mets and miRview mets² tests, we will be delaying our planned launch of miRview™ kidney for the accurate identification of four histological types of renal tumors, and miRview™ meso prognostic for the sub-classification of mesothelioma patients, as these tests represent smaller market opportunities.

"Moving forward, we have also prioritized the development of our Gen 3 products, which are designed to leverage microRNA biomarkers extracted from body fluids.

ge market opportunities in cardiovascular indications, n's health and the early detection of certain cancers. Our first two collaborations for the Gen 3 products leverage the capabilities and samples at specialized centers in order to identify initial microRNA candidate biomarkers with a goal to obtain proof-of-concept data on at least one of these Gen 3 products this year," concluded Mr. Berlin.

Fourth Quarter Results

During the fourth quarter of 2010, the Company recorded revenues from continuing operations of $45,000, compared with $136,000 for the third quarter of 2010 and $119,000 for the fourth quarter of 2009.

Research and development expenses for the fourth quarter of 2010 declined to $1.2 million, compared with $1.7 million for the fourth quarter of 2009, primarily due to lower costs related to salaries and development costs as a result of the previously announced restructuring.

Marketing and business development expenses for the fourth quarter of 2010 were $1.6 million, compared with $1.3 million for the fourth quarter of 2009.

General and administrative expenses for the fourth quarter of 2010 declined to $665,000, compared with $1.2 million for the fourth quarter of 2009, primarily due to lower costs related to salaries and costs as a result of the previously announced restructuring.

The operating loss for the fourth quarter of 2010 was $3.6 million, including $329,000 of non-cash stock-compensation expense. This compares with an operating loss for the fourth quarter of 2009 of $4.1 million, including $615,000 of non-cash stock-compensation expense.

The Company's net loss from continuing operations for the fourth quarter 2010 was $3.5 million or $0.21 per ordinary share, compared with a net loss from continuing operations for the fourth quarter of 2009 of $4.1 million or $0.29 per ordinary share.

On a non-GAAP basis, excluding stock-compensation expense and excluding income from revaluation of warrants, which are presented as a liability in the balance sheet, the net loss for the fourth quarter of 2010 was $3.5 million or $0.20 per ordinary share, compared with a net loss for the fourth quarter of 2009 of $3.6 million or $0.25 per ordinary share.

Details reconciling non-GAAP amounts with GAAP amounts are provided in the table below.

For the 12 months ended December 31, 2010 the Company reported revenues from continuing operations of $279,000, compared with $150,000 for the prior year period. The Company's net loss from continuing operations for 2010 was $14.2 million or $0.84 per ordinary share, compared with a net loss from continuing operations of $14.8 million or $1.09 per ordinary share for 2009.

On a non-GAAP basis, excluding stock-compensation expense and excluding income from revaluation of warrants, which are presented as a liability in the balance sheet, the net loss for 2010 was $14.1 million or $0.84 per ordinary share, compared with a net loss for 2009 of $15.2 million or $1.12 per ordinary share.

Details reconciling non-GAAP amounts with GAAP amounts are provided in the table below.

As of December 31, 2010 Rosetta Genomics had $3.3 million in cash and cash equivalents, restricted cash, short-term bank deposit and marketable securities, compared with $10.3 million as of December 31, 2009. The year-end 2010 cash position does not include the $5.5 million in net proceeds from the concurrent private placement and registered direct offerings in February 2011.

Conference Call

Rosetta Genomics management will host a conference call on Thursday, April 7, 2011 beginning at 10:00 a.m. Eastern time to discuss the fourth quarter and year end 2010 financial results and recent corporate developments, and answer questions. To access the live conference call, U.S. and Canadian participants may dial (866) 239-5859; international participants may dial (702) 495-1913. The access code for the call is 54361282.

To access the audio replay, beginning two hours after the event, U.S. and Canadian participants may dial (800) 642-1687; international participants may dial (706) 645-9291. The access code for the replay is 54361282. The replay will be available through 11:59 p.m. Eastern time on April 14, 2011.

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.

About microRNAs

MicroRNAs (miRNAs) are recently discovered, small RNAs that act as master regulators of protein synthesis, and have been shown to be highly effective biomarkers. The unique advantage of microRNAs as biomarkers lies in their high tissue specificity, and their exceptional stability in the most routine preservation methods for biopsies, including Formalin Fixed Paraffin Embedded (FFPE) block tissue and fine needle aspirate (FNA) cell blocks. It has been suggested that their small size (19 to 21

ain intact in FFPE blocks, as opposed to messenger grade rapidly. In addition, early preclinical data has shown that by controlling the levels of specific microRNAs, cancer cell growth may be reduced. To learn more about microRNAs, please visit www.rosettagenomics.com .

About Rosetta Genomics

Rosetta Genomics is a leading developer of microRNA-based molecular diagnostics. Founded in 2000, the companyôs 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 Genomics is working on the application of these technologies in the development of a full range of microRNA-based diagnostic tools. The companyôs microRNA-based tests, miRviewÊ squamous, miRviewÊ mets, miRviewÊ mets^2 and miRviewÊ meso, are commercially available through its Philadelphia-based CAP-accredited, CLIA-certified lab. To learn more, please visit www.rosettagenomics.com.

Forward-Looking Statement Disclaimer

Various statements in this release concerning Rosettaôs future expectations, plans and prospects, including without limitation, statements relating to the Rosettaôs plans to hire sales representatives in the U.S.,the potential market opportunities for Rosettaôs Gen 3 products and Rosettaôs goal to obtain proof-of-concept data on at least one Gen 3 product this year 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 Rosettaôs Annual Report on Form 20-F for the year ended December 31, 2010 as filed with the Securities and Exchange Commission. In addition, any forward-looking statements represent Rosettaôs 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.

Use of Non-GAAP Financial Measures

This press release contains certain non-GAAP financial measures. A ñnon-GAAP financial measureò 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 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 a table below under the heading ñReconciliation of GAAP to Non-GAAP Consolidated Statement of Operation.ò 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

aluating the Company's historical and prospective financial

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-Financial Tables to Follow-

TS OF OPERATIONS
share and per share data)

	Year ended December 31,		Three months ended December 31,	
	2010	2009	2010	2009
	Audited			
Revenues	$ 279	$ 150	$ 45	$ 119
Cost of revenues:	628	339	158	80
Gross loss (profit)	349	189	113	(39)
Operating expenses:				
Research and development, net	6,486	6,552	1,218	1,654
Marketing and business development	5,402	4,451	1,557	1,301
General and administrative	2,866	3,605	665	1,215
Other expenses related to the settlement arrangement, net	554	-	-	-
Total operating expenses	15,308	14,608	3,440	4,170
Operating loss	15,657	14,797	3,553	4,131
Financial expenses (income), net	(1,054)	(45)	28	(10)
Loss from continuing operations	14,603	14,752	3,581	4,121
Net loss from discontinued operations	539	1,753	158	(79)
Net loss after discontinued operations	$ 15,142	$ 16,505	3,739	4,042
Attributable to non-controlling interests	(387)	-	(69)	-
Net loss attributable to Rosetta Genomics	$ 14,755	$ 16,505	$ 3,670	$ 4,042
Basic and diluted net loss per Ordinary share from continuing operations attributable to Rosetta Genomics' shareholders	$ 0.84	$ 1.09	$ 0.20	$ 0.29
Basic and diluted net loss per Ordinary share from discontinuing operations attributable to Rosetta Genomics	$ 0.03	$ 0.13	$ 0.01	$ (0.01)
Basic and diluted net loss per Ordinary share attributable to Rosetta Genomics	$ 0.87	$ 1.22	$ 0.21	$ 0.28
Weighted average number of Ordinary shares used to computed basic and diluted net loss per Ordinary share	16,908,087	13,543,324	17,714,384	14,216,586

RECONCILIATION OF GAAP TO NON-GAAP CONSOLIDATED STATEMENT OF OPERATIONS:

	Year ended December 31,		Three Months ended December 31,	
	2010	2009	2010	2009
GAAP net loss as reported	$ 14,755	$ 16,505	$ 3,670	$ 4,042
NON-GAAP Adjustment:				
Expenses reported for stock-based compensation				
Cost of revenues	(11)	-	(5)	-
Research and development, net	(470)	(322)	(93)	(73)
Marketing and business development	(730)	(484)	(153)	(264)
General and administrative	(485)	(485)	(78)	(145)
Financial expenses (income), net - revaluation of Warrants related to share purchase agreement	1,072	-	165	-
Total Adjustment	(624)	(1,291)	(164)	(482)
NON-GAAP net loss	14,131	15,214	3,506	3,560
NON-GAAP Basic net loss (income) per Ordinary share	$ 0.84	$ 1.12	$ 0.20	$ 0.25

U.S. dollars in thousands (except share and per share data)

	December 31,	
	2010	2009
	Audited	
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 2,727	$ 3,329
Restricted cash	-	1,076
Short-term bank deposits	190	3,143
Marketable securities	392	2,756
Trade receivables, net	21	72
Other accounts receivable and prepaid expenses	458	557
Total current assets	3,788	10,933
LONG-TERM ACCOUNTS RECEIVABLES	153	502
SEVERANCE PAY FUND	128	92
PROPERTY AND EQUIPMENT, NET	1,224	1,216
Total long term assets	1,505	1,810
Total assets	$ 5,293	$ 12,743
LIABILITIES AND SHAREHOLDERSô EQUITY (DEFICIENCY)		
CURRENT LIABILITIES:		
Short-term bank loan, current maturities of capital lease and of long-term bank loan	$ 49	$ 125
Trade payables	1,152	654
Other accounts payable and accruals	2,117	1,526
Total current liabilities	3,318	2,305
LONG-TERM LIABILITIES:		
Long-term bank loan and capital lease	1	46
Convertible loan	-	1,500
Warrants related to share purchase agreement	1,479	-
Deferred revenue	228	1,928
Settlement arrangement	728	-
Accrued severance pay	169	122
Total Long-term Liabilities	2,605	3,596
EQUITY (DEFICIENCY):		
Rosetta Genomics Shareholders equity (deficiency):		
Share capital	46	32
Additional paid-in capital	74,732	68,174
Other comprehensive income	7	96
Deficit accumulated during the development stage	(76,215)	(61,460)
Total Rosetta Genomics shareholdersô equity (deficiency)	(1,430)	6,842
Non-controlling interest	800	-
Total Equity (deficiency)	(630)	6,842
Total liabilities and shareholdersô equity (deficiency)	$ 5,293	$ 12,743

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