



ROSETTA GENOMICS LTD.
10 Plaut St., Rabin Science Park
Rehovot, 7670609
Israel
Phone number +972-73-222-0700

NOTICE OF ANNUAL GENERAL MEETING OF SHAREHOLDERS

To Be Held On December 3, 2015

Notice is hereby given that an Annual General Meeting (the “**Annual Meeting**”) of the shareholders of Rosetta Genomics Ltd. (the “**Company**”), an Israeli corporation, will be held at the offices of the Company at 10 Plaut St., Rehovot, Israel on December 3, 2015 at 10:00 am (ET).

The agenda of the meeting shall be as follows:

1. Approval of the re-election of Dr. David Sidransky to serve as a Class II director of the Company for a three year term commencing on the date of his election at the Annual Meeting and until the Annual General Meeting of the Company’s shareholders to be held in 2018 in accordance with the Company’s Articles of Association; and
2. If Item 1 on the agenda of the Annual Meeting is approved, approval effective as of the date of the Annual Meeting, in accordance with Section 273(a) of the Israeli Companies, Law, 5759-1999 (the “**Companies Law**”) of a grant to Dr. David Sidransky of an option to purchase up to 24,000 of the Company’s ordinary shares, nominal (par) value NIS 0.6 each (“**Ordinary Shares**”); and
3. Approval of the re-election of Mr. Joshua Rosensweig to serve as a Class II director of the Company for a three year term commencing on the date of his election at the Annual Meeting and until the Annual General Meeting of the Company’s shareholders to be held in 2018 in accordance with the Company’s Articles of Association; and
4. Approval of the re-appointment of Kost, Forer, Gabbay & Kasierer, a member firm of Ernst & Young Global (“**KFGK**”), as the Company’s independent registered public accounting firm for the fiscal year ending December 31, 2015, and until the next Annual Meeting, and to authorize the Audit committee and the Board of Directors of the Company to determine the remuneration of KFGK in accordance with the volume and nature of their services; and
5. Approval of the addition of 500,000 Ordinary Shares to the shares authorized for issuance under the Company’s 2006 Employee Incentive Plan (Global Share Incentive Plan (2006)) (“**GSIP**”), so that the total number of Ordinary Shares authorized for issuance under the GSIP will equal 2,303,739; and
6. Approval effective as of the date of the Annual Meeting, in accordance with Section 272(c1)(1) of Companies Law of an amendment to the employment terms for Mr. Ken Berlin, the Chief Executive Officer of the Company (the “**CEO**”). According to which, following his signing a restated agreement with the Company (the “**Agreement**”), the terms of Mr. Berlin’s current employment will be extended until the Company’s 2017 Annual Shareholder Meeting, and (i) his bonus eligibility would increase to \$450,000 USD subject to meeting targets as set out from time to time by the Company’s Compensation Committee and Board of Directors, and (ii) that the definition of Change of Control in Mr. Berlin’s Employment Agreement be amended to include a situation in which “Continuing Directors cease for any reason to constitute at least a majority of the Board. For this purpose, a “Continuing Director” is any person who at the beginning of the term, was a member of the Board, or any person first elected to the Board during the term whose election, or the nomination for election by the Company’s shareholders, was approved by a vote of at least two-thirds of the Continuing Directors then in office, but excluding any person (1) initially appointed or elected to office as a result of either an actual or threatened election and/or proxy contest by or on behalf of any “person” or “group” (within the meaning of Section 13(d) of the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”)) other than the Board, or (2) designated by any

“person” or “group” (within the meaning of Section 13(d) of the Exchange Act) who has entered into an agreement with the Company to (i) become a shareholder controlling over 50% of the Company or its subsidiary, Rosetta Genomics Inc. (the “Subsidiary”), or (ii) merge with the Company or its Subsidiary or (iii) buy all or substantially all of either the Company’s, or the Subsidiary’s assets , or (iv) in any case of liquidation of the Company or its Subsidiary by its respective stockholders ,” and that such bonus eligibility and amendment to the change of control provision would be incorporated into his employment terms and would also be in effect until the Company’s 2017 Annual Shareholder Meeting; and

7. Approval, in accordance with Section 272(c)(1)(1) of the Companies Law, to grant Mr. Ken Berlin, the Chief Executive Officer of the Company, (i) an option to purchase up to 220,000 of the Company's Ordinary Shares, at an exercise price per share equal to the closing price on the date of the approval of such a grant by the shareholders, with 25% of the grant vesting at the first anniversary of the grant and then in equal installments each quarter during the next two years (altogether the vesting period shall be three years), unless it expires earlier in accordance with the terms of the Company's GSIP, and (ii) 45,000 Restricted Stock Units ("RSUs"), which will vest one year after the approval of the grant by the shareholders. The options and RSUs are granted and otherwise subject to the same terms and conditions as applicable to options and RSUs granted under the GSIP, and will be added to the GSIP independently of the addition proposed in Item 4 of the meeting's agenda; and
8. Approval of an increase of the Company's registered (authorized) share capital and the corresponding amendment to the Articles, all as described in the accompanying proxy statement; and
9. To discuss the Consolidated Financial Statements of the Company for the fiscal year ended December 31, 2014.

The approval of each of Items 1 through 5 and item 8 requires the affirmative vote of the holders of a majority of the voting power represented at the meeting, in person or by proxy, and voting on the matter.

The approval of each of Item 6 and Item 7 requires the affirmative vote of the holders of a majority of the voting power represented at the meeting, in person or by proxy, and voting on the matter, provided that (i) such a majority includes at least a majority of the ordinary shares voted by shareholders who are not controlling shareholders of the Company nor are they shareholders who have a personal interest in the approval of the proposal set forth in such Item; *or* (ii) the total number of shares of non-controlling shareholders and non-interested shareholders voted against the proposal in such Item does not exceed two percent (2%) of the total voting rights in the Company. Abstentions shall not be taken into account in counting the above-referenced shareholder votes.

Under the Companies Law, in general, a person will be deemed to be a controlling shareholder if the person has the power to direct the activities of the company, including a shareholder holding 25% or more of the voting rights if no other shareholder owns more than 50% of the voting rights in the company, but excluding a shareholder whose power derives solely from his or her position on the board of directors or any other position with the company. If two or more shareholders are interested parties in the same transaction, their shareholdings are combined for the purposes of calculating percentages. A shareholder holding 50% or more of the voting rights of the Company is presumed to be a controlling shareholder.

A shareholder will be deemed to have a personal interest if he or she has personal interest in an act or transaction of the company, including a personal interest of his or her relative or of a corporate body in which that person or a relative of that person is a holder of 5% or more of that corporate body's outstanding shares or voting rights, is a director or general manager, or in which he or she has the right to appoint at least one director or the general manager. For that matter according to the Companies Law, "Personal interest" does not apply to a personal interest stemming merely from the holding of shares of the company. In addition, the term "personal interest" also includes the personal interest of a person voting under a proxy given by another person, even if such appointing person has no personal interest in the proposed act or transaction. In addition, the vote of a person voting under a proxy given by a person having a personal interest in the proposed act or transaction, even if the person voting under the proxy has no personal interest, shall be deemed as a vote made by a person having a personal interest in the proposed act or transaction. The Companies Law defines a "relative" as a person's spouse, sibling, parent, grandparent or descendent, as well as the descendant, sibling or parent of a person's spouse, or the spouse of any of the foregoing.

With regards to the approval of Item 6 and Item 7 in the Proxy Card attached to the proxy statement, you will be asked to indicate whether or not you are a controlling shareholder of the Company and whether or not you have a personal interest in the proposal set forth in Item 6 and Item 7. If any shareholder casting a vote in connection hereto does not notify us whether or not it is a controlling shareholder of the Company or whether or not the shareholder has a personal interest in the approval of the proposal set forth in Item 6 and Item 7, such shareholder's vote with respect to such Item will be disqualified.

Only Shareholders of record at the close of trading on November 2, 2015, will be entitled to vote at the Annual Meeting. All shareholders are cordially invited to attend the Annual Meeting in person. Discussion at the Annual Meeting will be commenced if a quorum is present. Two or more shareholders present, personally or by proxy, who hold or represent together more than 25% of the voting rights of our issued share capital will constitute a quorum for the Annual Meeting. If within half an hour from the time scheduled for the Annual Meeting, a quorum is not present, the Annual Meeting shall be adjourned to exactly one week after the original meeting date at the same time and place. At any such adjourned meeting, any two shareholders who are present in person or by proxy shall constitute a quorum.

Shareholders who do not expect to attend the Annual Meeting in person may vote with respect to Items 1 through 8 by means of a Proxy Card and are requested to mark, date and sign the enclosed Proxy Card and return it promptly in the pre-addressed envelope provided. No postage is required if mailed in the United States. Joint holders of shares should take note that, pursuant to Article 32 of the Company's Articles of Association, the vote of the senior holder who tenders a vote, in person or by Proxy Card, will be accepted to the exclusion of the vote(s) of the other joint holder(s), and for this purpose seniority will be determined by the order of registration of the joint holders in the Company's shareholder register. In order to be counted, a duly executed Proxy Card must be delivered to the Company's registered office at 10 Plaut St., Rabin Science Park, Rehovot, 7670609, Israel or to the office of the Company's transfer agent, American Stock Transfer & Trust Company located at 6201 15th Avenue, Brooklyn, NY 11219 not less than four (4) hours before the time fixed for the Annual Meeting unless such requirement is waived by the chairman of the Annual Meeting. Shareholders who attend the Annual Meeting and provide the required information may revoke their Proxy Cards and vote their shares in person.

According to the Companies Law, one or more shareholders who hold at least 1% of the voting rights in the General Meeting may request, within seven (7) days as of the date of this notice, that the Board of Directors include a subject matter on the agenda of the General Meeting, provided it is suitable for discussion at a General Meeting.

The complete form of the proposed resolutions and relevant documents may be inspected at the offices of the Company at its above mentioned address during normal business hours, upon prior coordination with Adv. Yael Rosen, Legal Counsel, at +972-73-222-0700 and on the Company's website at www.rosettagenomics.com.

In accordance with the Companies Law and regulations promulgated thereunder, any shareholder of the Company may submit to the Company a position statement on its behalf, expressing their position on an agenda item for the meeting to the Company's offices at its above mentioned address, Attention: Oded Biran, Chief Legal Officer, or by facsimile to +972-73-2220701, no later than November 12, 2015. Any position statement so received will be furnished to the SEC on Form 6-K, and will be made available to the public on the SEC's website at <http://www.sec.gov>.

By order of the Board of Directors,
/s/ Brian A. Markison

Brian A. Markison
Chairman of the Board
October 27, 2015

PROXY STATEMENT



ROSETTA GENOMICS LTD.
10 Plaut St., Rabin Science Park
Rehovot, 7670609
Israel
Phone number +972-73-222-0700

ANNUAL GENERAL MEETING OF SHAREHOLDERS

To Be Held On December 3, 2015

The enclosed proxy is being solicited by the Board of Directors of Rosetta Genomics Ltd. (the “**Board**” and the “**Company**”, respectively) for use at our Annual General Meeting of Shareholders (the “**Annual Meeting**”) to be held at the offices of the Company, at 10 Plaut St., Rehovot, Israel on **December 3, 2015** at 10:00 am (ET), or at any postponement or adjournment thereof. The record date for determining shareholders entitled to vote at, the Annual Meeting has been established as of the close of trading on November 2, 2015.

As of October 21, 2015, we had outstanding 18,177,361 of our ordinary shares, nominal (par) value NIS 0.6 each (“**Ordinary Shares**”), each of which is entitled to one vote on each matter to be voted at the Annual Meeting¹. The votes of all shareholders voting on a matter are counted and abstentions are not taken into account (other than for quorum purposes).

We expect to solicit proxies by mail and to mail this proxy statement to shareholders on or about November 3, 2015. We will bear the cost of the preparation and mailing of these proxy materials and the solicitation of proxies. We will, upon request, reimburse banks, brokerage houses, other institutions, nominees, and fiduciaries for their reasonable expenses in forwarding solicitation materials to beneficial owners. As of October 27, 2015, these proxy materials have also been filed with the U.S. Securities and Exchange Commission (the “**SEC**”) as an exhibit to a Report on a Form 6-K and are available on the Company’s website www.rosettagenomics.com. In order to be counted, a duly executed proxy must be delivered to the Company’s registered office at 10 Plaut St., Rabin Science Park, Rehovot, 7670609, Israel or to the office of the Company’s transfer agent, American Stock Transfer & Trust Company located at 6201 15th Ave, Brooklyn, NY 11219, not less than four (4) hours before the time fixed for the Annual Meeting unless such requirement is waived by the chairman of the Annual Meeting.

Upon the receipt of a properly executed proxy in the form enclosed, the persons named as proxies therein will vote the Ordinary Shares covered thereby in accordance with the instructions of the shareholder executing the proxy. With respect to each proposal set forth in the accompanying Notice of Annual Meeting of Shareholders (the “**Notice of Meeting**”), a shareholder may vote in favor of or against the proposal or may abstain from voting on the proposal. Shareholders should specify their choice on the accompanying proxy.

Any shareholder returning the accompanying proxy may revoke such proxy at any time prior to its exercise by: (i) giving written notice to us of such revocation; (ii) voting in person at the Annual Meeting or requesting the return of the proxy at the Annual Meeting; or (iii) executing and delivering to us a later-dated proxy.

Discussion at the Annual Meeting will be commenced if a quorum is present. Two or more shareholders present, personally or by proxy, who hold or represent together more than 25% of the voting rights of our issued share capital will constitute a quorum for the Annual Meeting. If within half an hour from the time scheduled for the Annual Meeting a quorum is not present, the Annual Meeting shall be adjourned to December 10, 2015 at the same time and place. At any such adjourned meeting, any two shareholders who are present in person or by proxy shall constitute a quorum. Shares subject to broker non-votes and abstentions are counted for purposes of determining whether a quorum is present but will have no effect on whether the requisite vote is obtained for all matters placed before shareholders for their vote, as with regard to any applicable matter broker non-votes and abstentions are not counted as being present or as having been voted.

¹ This does not include 3,257 Ordinary Shares held as treasury shares under Israeli law, all of which were repurchased by the Company. For so long as such treasury shares are owned by the Company, they have no rights and, accordingly, are neither eligible

to participate in or receive any future dividends which may be paid to shareholders of the Company nor are they entitled to participate in, be voted at or be counted as part of the quorum for, any meeting of shareholders of the Company.

The approval of each of Items 1 through 5 and item 8 requires the affirmative vote of the holders of a majority of the voting power represented at the meeting, in person or by proxy, and voting on the matter. Each of Item 6 and Item 7 to be presented at the Annual Meeting requires the vote of the holders of a majority of the voting power represented and voting on the matter in person or by proxy, provided that (i) such a majority includes at least a majority of the ordinary shares voted by shareholders who are not controlling shareholders of the Company nor are they shareholders who have a personal interest in the approval each of the proposals set forth in such Item; *or* (ii) the total number of shares of non-controlling shareholders and non-interested shareholders voted against the proposal in such Item does not exceed two percent (2%) of the total voting rights in the Company. Abstentions shall not be taken into account in counting the above-referenced shareholder votes.

Under the Companies Law, in general, a person will be deemed to be a controlling shareholder if the person has the power to direct the activities of the company, including a shareholder holding 25% or more of the voting rights if no other shareholder owns more than 50% of the voting rights in the company, but excluding a shareholder whose power derives solely from his or her position on the board of directors or any other position with the company. If two or more shareholders are interested parties in the same transaction, their shareholdings are combined for the purposes of calculating percentages. A shareholder holding 50% or more of the voting rights of the Company is presumed to be a controlling shareholder.

A shareholder will be deemed to have a personal interest if he or she has personal interest in an act or transaction of the company, including a personal interest of his or her relative or of a corporate body in which that person or a relative of that person is a holder of 5% or more of that corporate body's outstanding shares or voting rights, is a director or general manager, or in which he or she has the right to appoint at least one director or the general manager. For that matter according to the Companies Law - "Personal interest" does not apply to a personal interest stemming merely from the holding of shares of the company. In addition, the term "personal interest" also includes the personal interest of a person voting under a proxy given by another person, even if such appointing person has no personal interest in the proposed act or transaction. In addition, the vote of a person voting under a proxy given by a person having a personal interest in the proposed act or transaction, even if the person voting under the proxy has no personal interest, shall be deemed as a vote made by a person having a personal interest in the proposed act or transaction. The Companies Law defines a "relative" as a person's spouse, sibling, parent, grandparent or descendent, as well as the descendant, sibling or parent of a person's spouse, or the spouse of any of the foregoing.

With regards to the approval of each of Items 6 and 7 in the Proxy Card attached to the proxy statement, you will be asked to indicate whether or not you are a controlling shareholder of the Company and whether or not you have a personal interest in the proposal set forth in Items 6 and 7, and a description thereof, if such exists. If any shareholder casting a vote in connection hereto does not notify us whether or not it is a controlling shareholder of the Company or whether or not it has a personal interest in the approval of the proposal set forth in Items 6 and 7, such shareholder's vote with respect to such Item will be disqualified.

The Company is not currently aware of any controlling shareholders as such term is defined for purposes of the Israel Companies Law.

MATTERS RELATING TO THE ANNUAL GENERAL MEETING

At the Annual Meeting, the shareholders will be asked to vote on the following proposals:

PROPOSAL ONE — RE-ELECTION OF DR. DAVID SIDRANSKY AND HIS REMUNERATION AS A DIRECTOR

Background

Our Articles of Association (the "**Articles**") provide that the minimum number of members of the Board is two and the maximum number is seven. Our Board is presently comprised of seven members, two of whom are "external directors" appointed under the Companies Law. Our Board (other than the external directors) is divided into three different classes, Class I Directors, Class II Directors and Class III Directors, with one class being elected each year at the Company's annual general meeting for a term of approximately three years.

Our directors (except for the external directors) are divided among the classes as follows:

- **Class I directors are:** Mr. Brian A. Markison and Dr. Yitzhak Peterburg. Their term expires at the annual general meeting of shareholders in 2017.
- **Class II directors are:** Dr. David Sidransky and Dr. Joshua Rosensweig. Their term expires at this Annual Meeting.
- **Class III director is:** Roy N. Davis. His term expires at the annual general meeting of shareholders to be held in 2016.

In addition, our two external directors, Mr. Gerald Dogon and Ms. Tali Yaron-Eldar, were initially elected by our shareholders on May

30, 2007, were then re-elected on July 14, 2010 and August 5, 2013 for three-year terms, the last of which expires on August 4, 2016.

Given the end of the term of Dr. David Sidransky, we are proposing that the shareholders re-elect Dr. Sidransky as a director for an additional term of three years. If re-elected at this Annual Meeting, Dr. Sidransky will serve until the annual general meeting of the Company's shareholders to be held in 2018 or until his office is vacated in accordance with the Articles and the Companies Law.

The Companies Law requires that a person will not be elected and will not serve as a director in a public company if he or she does not have the required qualifications and the ability to dedicate an appropriate amount of time to the performance of his or her duties as director of the company, taking into consideration, among other factors, the special needs and size of the company. A general shareholders' meeting of a public company, at which the election of a director is to be considered, will not be convened unless the nominee has declared to the company, *inter alia*, that he or she complies with the above-mentioned requirements and details of his or her applicable qualifications are provided.

Dr. Sidransky has declared to the Company that he complies with the required qualifications under the Companies Law for appointment as a director of the Company, detailed his applicable qualifications to the Company, and demonstrated to the Company that he is capable of dedicating the appropriate amount of time for the performance of his duties as a director. Copies of the declaration of Dr. Sidransky are available for inspection at the Company's offices in Rehovot, Israel.

The following information is provided with respect to Dr. Sidransky and is based upon the records of the Company and information provided to it by Dr. Sidransky:

David Sidransky, M.D., from Israel, born June 21, 1960, has served as a member of our board of directors since December 22, 2009. Dr. Sidransky is a renowned oncologist and research scientist named and profiled by TIME magazine in 2001 as one of the top physicians and scientists in America, recognized for his work with early detection of cancer. He serves as the Director of the Head and Neck Cancer Research Program at the Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins University. He is a Professor of Oncology, Otolaryngology, Cellular & Molecular Medicine, Urology, Genetics, and Pathology at Johns Hopkins University and Hospital. Dr. Sidransky has written over 480 peer-reviewed publications, and has contributed to more than 60 cancer reviews and chapters. Dr. Sidransky is a founder of a number of biotechnology companies and holds numerous biotechnology patents. He has been the recipient of many awards and honors, including the 1997 Sarstedt International prize from the German Society of Clinical Chemistry, 1998 Alton Ochsner Award Relating Smoking and Health by the American College of Chest Physicians and the 2004 Hinda Rosenthal Award presented by the American Association of Cancer Research. Dr. Sidransky has served as Vice Chairman of the Board of Directors of ImClone. He is Chairman of the Board of Champions Oncology and Tamir Biotechnology and is on the Board of Directors of Galmed, Celsus, Orgenesis, and Advaxis. He is serving and has served on scientific advisory boards of corporations and institutions, including Amgen, MedImmune, Roche and Veridex, LLC (a Johnson & Johnson diagnostic company), among others. In Addition, Dr. Sidransky served as Director of American Association for Cancer Research from 2005 to 2008. Dr. Sidransky received his B.A. from Brandeis University and his M.D. from the Baylor College of Medicine.

The address for Dr. Sidransky is c/o Rosetta Genomics Ltd., 10 Plaut Street, Science Park, Rehovot 7670609 Israel.

Dr. Sidransky shall receive remuneration that is equal to the remuneration paid to the other directors of the Company (except for the Chairman of the Board who receives higher remuneration). In accordance with prior resolutions of the Company's Compensation Committee, Board and shareholders meetings that were held on October 12, 2012, and On August 5, 2013.

Assuming Dr. Sidransky is re-elected, he will be entitled to receive: (1) remuneration in an amount of \$20,000 USD plus VAT per year, and additional annual remuneration of \$7,500 USD plus VAT per committee (Dr. Sidransky is currently a member of our Audit Committee and our Research and Development Committee) (2) payment of a participation fee of the higher of: (a) \$250 USD plus VAT; or (b) the minimal participation fee according to the Israeli Companies Law 1999, and the regulations promulgated pursuant thereto (as of the date hereof -\$346.8 USD), for every Board or Board committee meeting including, *inter alia*, meeting by means of communication (teleconferences) and unanimous written resolutions, and (3) 5,000 RSUs upon the commencement of each twelve-month period in office as a director beginning on the date of the Annual Meeting. The RSUs are granted and otherwise subject to the same terms and conditions as applicable to RSUs granted under the GSIP, except that the exercise period of the RSUs upon termination shall be six months.

THE BOARD OF DIRECTORS WILL PRESENT THE FOLLOWING RESOLUTION AT THE MEETING:

“RESOLVED, to re-elect Dr. David Sidransky, as a Class II director, to serve for a term of three years, until the 2018 annual general meeting of shareholders. “

An affirmative vote of a majority of the shares represented in person or by proxy and voting at the Annual Meeting is required for the approval of such resolution.

Board of Directors' Recommendation:

THE BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE “FOR” THE ABOVE PROPOSED RESOLUTION.

PROPOSAL TWO — CONDITIONAL GRANT OF OPTIONS TO DR. DAVID SIDRANSKY

Background

According to the Companies Law, as amended in Amendment No. 20, the terms of employment of a director in a public company should be approved (in the following order) by (i) the compensation committee, (ii) the board of directors and (iii) by the general meeting of shareholders of the Company as set forth below.

The Company’s Compensation Committee and Board resolved that, subject to the approval of the Company’s shareholders at the Annual Meeting, should Dr. Sidransky’s appointment be approved according to Item 1 of the agenda for the Annual Meeting, upon commencement of his three-year term, Dr. Sidransky be eligible to receive, in addition to the remuneration detailed in Item 1, an option to purchase up to 24,000 Ordinary Shares, at an exercise price per share equal to the closing price on the date of the Annual Meeting, vesting in three equal installments annually, beginning on the date of the Annual Meeting and such option shall expire seven years after the date of grant, unless it expires earlier in accordance with the terms of the GSIP, and that the option will be granted and otherwise subject to the same terms and conditions as applicable to options granted under the GSIP, except that the exercise period of the option upon termination shall be six months. During his previous terms in office Dr. Sidransky received options to purchase an aggregate of 24,462 Ordinary Shares, at exercise prices per share varying between \$342.00 USD to \$5.37 USD, all of which have already vested and will expire seven years after their date of grant, unless they expire earlier in accordance with the terms of the GSIP.

THE BOARD OF DIRECTORS WILL PRESENT THE FOLLOWING RESOLUTION AT THE MEETING:

“**RESOLVED**, To approve, in accordance with Section 273(a) of the Companies Law that Dr. Sidransky receive an option to purchase 24,000 Ordinary Shares, at an exercise price per share equal to the closing price on the date of the Annual Meeting, vesting in three equal installments annually beginning on the date of the Annual Meeting and such option shall expire seven years after the date of grant, unless it expires earlier in accordance with the terms of the GSIP, and that the option will be granted and otherwise subject to the same terms and conditions as applicable to options granted under the GSIP, except that the exercise period of the option upon termination shall be six months.”

An affirmative vote of a majority of the shares represented in person or by proxy and voting at the Annual Meeting is required for the approval of such resolution.

Board of Directors’ Recommendation:

THE BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE “FOR” THE ABOVE PROPOSED RESOLUTION.

PROPOSAL THREE — RE-ELECTION OF MR. JOSHUA ROSENSWEIG

Background

Given the end of the term of Mr. Joshua Rosensweig, we are proposing that the shareholders re-elect Mr. Rosensweig as a Class II Director of the Company for an additional term of three years. If re-elected at this Annual Meeting, Mr. Rosensweig will serve until the annual general meeting of the Company’s shareholders to be held in 2018 or until such director’s office is vacated in accordance with the Company’s Articles and the Companies Law.

Mr. Rosensweig has declared to the Company that he complies with the required qualifications under the Companies Law for appointment as a director of the Company, detailed his or her applicable qualifications to the Company, and demonstrated to the Company that he is capable of dedicating the appropriate amount of time for the performance of his duties as a director. Copies of the declaration of the proposed nominee are available for inspection at the Company’s offices in Rehovot, Israel.

The following information is provided with respect to Mr. Rosensweig and is based upon the records of the Company and information provided to it by Mr. Rosensweig:

Joshua Rosensweig, from Israel, born August 17, 1952, has served as a member of our board of directors since May 2004. Since November 2010, he has served as a member of the board of directors of Bezeq Israel Telecommunication Corp. Ltd. (Israel’s leading communications group) and of Alrov Real Estate and Hotels Ltd., a publicly-traded property development company. From September 2003 to September 2006, Dr. Rosensweig served as the Chairman of the Board of Directors of the First International Bank of Israel.

From 1998 to July 2005, Dr. Rosensweig was a senior partner at Gornitzky and Co., a law firm where he specialized in international transactions and taxation. Dr. Rosensweig lectured at Bar-Ilan University, Law School from 1980 to 1995 and at Tel Aviv University, School of Business from 1983 to 1995. Dr. Rosensweig received his J.S.D. (International Taxation), and LL.M. (Taxation) from New York University Law School. Dr. Rosensweig is currently a partner at the law firm of Rosensweig & Aviram, Attorneys.

The address for Mr. Rosensweig is c/o Rosetta Genomics Ltd., 10 Plaut Street, Science Park, Rehovot 7670609 Israel.

Mr. Rosensweig shall receive remuneration that is equal to the remuneration paid to the external directors of the Company. In accordance with prior resolutions of the Company's Compensation Committee, Board and shareholders meetings that were held on October 12, 2012, and On August 5, 2013.

Assuming Mr. Joshua Rosensweig is re-elected, he will be entitled to receive remuneration equal to the remuneration to which the Company's external Directors are eligible, which according to the resolution of the shareholders dated August 5, 2013, currently is: (1) remuneration in an amount of \$20,000 USD plus VAT per year, and additional annual remuneration of \$7,500 USD plus VAT per committee (Mr. Rosensweig is a member of. Mr Rosensweig is currently a member of our Compensation Committee and our Nomination and Governance Committee) (2) payment of a participation fee of the higher of: (a) \$250 USD plus VAT; or (b) the minimal participation fee according to the Israeli Companies Law 1999, and the regulations promulgated pursuant thereto (as of the date hereof -\$346.80 USD), for every Board or Board committee meeting including, *inter alia*, meeting by means of communication (teleconferences) and unanimous written resolutions, (3) 5,000 RSUs upon the commencement of each twelve-month period in office as a director beginning on the date of the Annual Meeting. The RSUs are granted and otherwise subject to the same terms and conditions as applicable to RSUs granted under the GSIP, except that the exercise period of the options and RSUs upon termination shall be six months.

THE BOARD OF DIRECTORS WILL PRESENT THE FOLLOWING RESOLUTION AT THE MEETING:

"RESOLVED, to re-elect Mr. Joshua Rosensweig as a Class II director, to serve for a term of three years, until the 2018 annual general meeting of shareholders

An affirmative vote of a majority of the shares represented in person or by proxy and voting at the Annual Meeting is required for the approval of such resolution.

Board of Directors' Recommendation:

THE BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE "FOR" THE ABOVE PROPOSED RESOLUTION.

PROPOSAL FOUR — APPROVAL OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM AND AUTHORIZATION TO DETERMINE COMPENSATION

Background

At the Annual Meeting, Kost, Forer, Gabbay & Kasierer, independent registered public accountants in Israel and a member firm of Ernst & Young Global ("KFGK"), will be nominated for re-appointment as independent registered public accounting firm of the Company and its subsidiaries for the fiscal year ending December 31, 2015, and until the next annual general meeting. Under the provisions of the Sarbanes-Oxley Act of 2002, the Company's Audit Committee is responsible for the appointment, compensation, retention and oversight of the work of the Company's independent auditors. However, under Israeli law, the appointment of independent auditors and their compensation require the approval of the shareholders of the Company. Pursuant to Israeli law, the shareholders may delegate the authority to determine the compensation of the independent auditors to the board of directors, and the Company's shareholders have done so in the past. In addition, pursuant to Israeli law, the Audit Committee is required to examine the independent auditor's fees and to provide its recommendations with respect thereto to the appropriate corporate organ. Accordingly, the appointment of the independent auditors will be required to be approved and recommended to the shareholders by the Audit Committee and approved by the shareholders. The compensation of the independent auditors will be required to be approved by the Audit Committee and recommended to the shareholders or, if so authorized by the shareholders, to the Board and approved by either the shareholders or the Board, as the case may be. The Audit Committee has reviewed, and is satisfied with, the performance of KFGK, and has approved their re-appointment as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2015. Approval of that appointment, as well as authorization of the Board to determine the compensation of the independent auditors, provided such remuneration is also approved by the Audit Committee, is now being sought from the Company's shareholders.

The Audit Committee is responsible for the oversight of its independent auditors' scope of work. The Audit Committee's policy is to pre-approve all audit and non-audit services provided by KFGK and other members of Ernst & Young Global. These services may include audit services, audit-related services, tax services and other services, as further described below. The Audit Committee sets forth the basis for its pre-approval in detail, listing the particular services or categories of services which are pre-approved, and setting forth a specific budget for such services. Additional services may be pre-approved by the Audit Committee on an individual basis. Once services have been pre-approved, KFGK and management then report to the Audit Committee on a periodic basis regarding the extent of services actually provided in accordance with the applicable pre-approval, and regarding the fees for the services performed.

The Company paid the following fees for professional services rendered by KFGK and other members of Ernst & Young Global, for the years ended December 31, 2013 and 2014:

	Year Ended December 31,	
	2014	2013
Audit fees ⁽¹⁾	\$ 102,000	\$ 103,000
Audit related fees ⁽²⁾	\$ 2,700	\$ 24,879
Tax fees ⁽³⁾	\$ 24,114	\$ 73,538
Total	<u>\$ 128,814</u>	<u>\$ 201,417</u>

- (1) Includes professional services rendered with respect to the audits of the Company's annual consolidated financial statements, management's assessment of internal control over financial reporting, review of consolidated quarterly financial statements, statutory audits of the Company and its subsidiaries, consents and assistance with review of documents filed with the SEC.
- (2) Includes consultations concerning financial accounting and reporting standards and internal control reviews and consultations and due diligence respecting accounting matters in connection with acquisitions and dispositions.
- (3) Includes fees for services related to tax compliance, including preparation of tax returns, claims for refund and assistance with audits and appeals; and tax planning and advice, including advice related to acquisitions and dispositions, services for employee benefit plans, issues with respect to transfer pricing and advice for expatriates.

KFGK has no relationship with the Company or any affiliate of the Company except as auditors and, to a limited extent, as tax consultants. The Audit Committee believes that this limited non-audit function does not affect the independence of KFGK.

THE BOARD OF DIRECTORS WILL PRESENT THE FOLLOWING RESOLUTION AT THE ANNUAL MEETING:

“**RESOLVED**, that Kost, Forer, Gabbay & Kasierer, independent registered public accountants in Israel and a member firm of Ernst & Young Global, be, and they hereby are, re-appointed as independent registered public accounting firm of the Company for the fiscal year ending December 31, 2015 and until the Company's next annual general meeting, and that the Board of Directors of the Company, be, and it hereby is, authorized to determine the remuneration of said auditors in accordance with the volume and nature of their services, provided such remuneration is also approved by the Audit Committee.”

An affirmative vote of a majority of the shares represented in person or by proxy and voting at the Annual Meeting is required for the approval of such resolution.

Board of Directors' Recommendation:

THE BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE “FOR” THE PROPOSED RESOLUTION.

PROPOSAL FIVE— INCREASE OF THE NUMBER OF ORDINARY SHARES AVAILABLE FOR ISSUANCE UNDER THE COMPANY’S GLOBAL SHARE INCENTIVE PLAN

Background

At the meeting of shareholders that took place on July 12, 2006, the Company's shareholders approved the Company's Global Share Incentive Plan (the “GSIP”).

Under the GSIP, the Company may issue either options, restricted shares or RSUs, to its employees, consultants and board members. Under the GSIP, the Company may also issue options or restricted shares to the employees, consultants and board members of its subsidiaries, including subsidiaries located in the United States. The aggregate amount of Ordinary Shares that was authorized to be issued under the GSIP upon its adoption was 12,879² Ordinary Shares.

At the annual meeting of the Company's shareholders that took place on December 22, 2009, the shareholders resolved to increase the number of Ordinary Shares available for issuance under the GSIP by 25,000 Ordinary Shares. Out of such 25,000 Ordinary Shares, approximately 16,666 Ordinary Shares were dedicated as available for grant to employees who are United States taxpayers.

At an extraordinary meeting of the Company's shareholders that took place on July 14, 2010, the shareholders resolved that in order to allow the Company flexibility in compensating Israeli and United States employees, all 25,000 Ordinary Shares, approved by the shareholders for grant under the GSIP on December 22, 2009, be eligible for grant to all employees of the Company, irrespective of whether they are United States or Israeli taxpayers.

At the annual meeting of the Company's shareholders that took place on October 12, 2012, our shareholders approved the addition of 853,770 Ordinary Shares of the Company to the amount of Ordinary Shares authorized for issuance under the GSIP.

At the annual meeting of the Company's shareholders that took place on November 12, 2014, the shareholders resolved to increase the number of Ordinary Shares authorized and available for issuance under the GSIP by 900,000 Ordinary Shares so that the total number of Ordinary Shares authorized for issuance under the GSIP was 1,803,739. However, as of September 30, 2015, approximately 515,000 Ordinary Shares are available for grants under the GSIP. Furthermore, out of the outstanding options for 1,077,071 Ordinary Shares, more than half had exercise prices ranging from \$3.62 USD per share to \$528.00 USD per share.

THE BOARD OF DIRECTORS WILL PRESENT THE FOLLOWING RESOLUTION AT THE MEETING:

“**RESOLVED**, to approve, the addition of 500,000 Ordinary Shares to the amount of Ordinary Shares authorized for issuance under the Company's 2006 Employee Incentive Plan (Global Share Incentive Plan (2006)) (“**GSIP**”) so that the total number of Ordinary Shares authorized for issuance under the GSIP will equal 2,303,739 and that all of these shares shall be eligible for grant to all employees of the Company, irrespective of whether they are United States or Israeli taxpayers.”

An affirmative vote of a majority of the shares represented in person or by proxy and voting at the Annual Meeting is required for the approval of such resolution.

Board of Directors' Recommendation:

THE BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE “FOR” THE PROPOSED RESOLUTION.

PROPOSAL SIX— TO APPROVE THE EXTENSION OF THE TERMS OF EMPLOYMENT OF MR. KEN BERLIN AND AMENDMENT TO HIS BONUS ENTITLEMENT AND DEFINITION OF CHANGE OF CONTROL IN HIS AGREEMENT

² All amounts of Ordinary Shares in the subsection for Proposal Five entitled “background” are adjusted to give effect to (i) a 1-for-3.9822 reverse split that took place on June 15, 2006; (ii) a 1-for-4 reverse split that took place on July 6, 2011 and (iii) a 1-for-15 reverse split that took place on May 14, 2012.

Background

Kenneth A. Berlin joined the Company in November 2009 as President and Chief Executive Officer. He was later appointed by the Company's shareholders in December 2009 as a member of our board of directors, and resigned as a director in March 2011. Prior to joining the Company, Mr. Berlin, served as Worldwide General Manager at cellular and molecular cancer diagnostics developer Veridex, LLC, a Johnson & Johnson company. Under his leadership the organization grew to over 100 employees, and he spearheaded the launch of three cancer diagnostic products, the acquisition of its cellular diagnostics partner, and delivered significant growth in sales as Veridex transitioned from a research and development entity to a commercial provider of oncology diagnostic products and services. During Mr. Berlin's tenure, Veridex received numerous awards including recognition from the Cleveland Clinic and Prix Galien for the use of its innovative CellSearch® technology in the fight against cancer. Mr. Berlin joined Johnson & Johnson in 1994 and served as corporate counsel for six years. He then held positions of increasing responsibility within Johnson & Johnson and a number of its subsidiary companies. From 2001 until 2004, he served as Vice President, licensing and new business development in the pharmaceuticals group, and from 2004 until 2007 was Worldwide Vice President, franchise development, Ortho-Clinical Diagnostics. Mr. Berlin holds an A.B. degree from Princeton University and a J.D. from the University of California, Los Angeles School of Law.

Mr. Berlin's original terms of Employment included a base salary of \$375,000 USD, payable bi-weekly, a target bonus of up to 100% of Mr. Berlin's base salary, a starting bonus of \$200,000 USD in cash upon his commencement date and three additional bonuses of \$125,000 USD each conditioned upon the achievement of certain milestones. These terms of employment were amended with the approval of the Audit Committee and the Board on June 3, 2012 for the period between June 3, 2012 and December 31, 2013 to reflect a base salary of \$500,000 USD, however, during that time, the bonus remained up to 100% of the original base salary, a total of \$375,000 USD per year. At the annual meeting of the Company's shareholders that took place on November 12, 2014, the shareholders resolved to extend the amendment dated June 3, 2012 of the employment agreement of Mr. Ken Berlin such that he will be entitled to a base salary at the annual rate of \$500,000 USD, payable bi-weekly or otherwise in accordance with the payroll policy of the Company, and such extension was set to expire at this Annual Meeting

According to the Companies Law, as amended in Amendment No. 20, the terms of employment of a chief executive officer should be approved (in the following order) by (i) the Compensation Committee, (ii) the board of directors and (iii) by the general meeting of shareholders of the Company as set forth below.

The Company's Compensation Committee and Board resolved that, subject to the approval of the Company's shareholders at the Annual Meeting, to approve in accordance with Section 272(c1)(1) of the Companies Law, that the term of employment of Mr. Ken Berlin, the Chief Executive Officer of the Company, be extended until the annual meeting of the shareholders for the year of 2017, and that the terms of the bonus provision in his terms of employment would be amended so that (i) the bonus he would be eligible for would not exceed a total of \$450,000 USD per year, subject to meeting targets as set out from time to time by the Company's Compensation Committee and Board, and (ii) that the definition of Change of Control in Mr. Berlin's Employment Agreement be amended to include a situation in which "Continuing Directors cease for any reason to constitute at least a majority of the Board. For this purpose, a "Continuing Director" is any person who at the beginning of the term, was a member of the Board, or any person first elected to the Board during the term whose election, or the nomination for election by the Company's shareholders, was approved by a vote of at least two-thirds of the Continuing Directors then in office, but excluding any person (1) initially appointed or elected to office as a result of either an actual or threatened election and/or proxy contest by or on behalf of any "person" or "group" (within the meaning of Section 13(d) of the Exchange Act) other than the Board, or (2) designated by any "person" or "group" (within the meaning of Section 13(d) of the Exchange Act) who has entered into an agreement with the Company to (i) become a shareholder controlling over 50% of the Company or its subsidiary, Rosetta Genomics Inc. (the "Subsidiary"), or (ii) merge with the Company or its Subsidiary, or (iii) buy all or substantially all of either the Company's, or the Subsidiary's assets, or (iv) in any case of liquidation of the Company or its Subsidiary by its respective stockholders", and that both these provisions will be added to the terms of Mr. Berlin's employment, so that they too will expire at the Company's 2017 Annual Shareholder Meeting. A Change of Control occurrence would entitle Mr. Berlin to increased severance if he is terminated within a certain timeframe before or after such event occurs.

THE BOARD OF DIRECTORS WILL PRESENT THE FOLLOWING RESOLUTION AT THE MEETING:

"RESOLVED, To approve in accordance with Section 272(c1)(1) of the Israeli Companies, Law, 5759-1999 (the "**Companies Law**") the extension of the employment term for Mr. Ken Berlin, the Chief Executive Officer of the Company, until the annual meeting of the shareholders for the year of 2017, and according to which, Mr. Berlin is entitled to a base salary at the annual rate of \$500,000 USD, payable bi-weekly or otherwise in accordance with the payroll policy of the Company, and (i) increasing Mr. Berlin's bonus, so that he will be eligible for an annual bonus of up to \$450,000 USD subject to his meeting targets as set out from time to time by the Company's Compensation Committee and Board; and (ii) that the definition of Change of Control in Mr. Berlin's Employment Agreement be amended to include a situation in which "Continuing Directors cease for any reason to constitute at least a majority of the Board. For this purpose, a "Continuing Director" is any person who at the beginning of the Term, was a member of the Board, or any person first elected to the Board during the Term whose election, or the nomination for election by the Company's shareholders, was

approved by a vote of at least two-thirds of the Continuing Directors then in office, but excluding any person (1) initially appointed or elected to office as a result of either an actual or threatened election and/or proxy contest by or on behalf of any “person” or “group” (within the meaning of Section 13(d) of the Exchange Act) other than the Board, or (2) designated by any “person” or “group” (within the meaning of Section 13(d) of the Exchange Act) who has entered into an agreement with the Company to (i) become a shareholder controlling over 50% of the Company or its subsidiary, Rosetta Genomics Inc. (the “Subsidiary”), or (ii) merge with the Company or its Subsidiary or (iii) buy all or substantially all of either the Company’s, or the Subsidiary’s assets , or (iv) in any case of liquidation of the Company or its Subsidiary by its respective stockholders .” and that Mr. Berlin’s amended employment terms will expire at the Company’s 2017 Annual Shareholder Meeting.

An affirmative vote of the holders of a majority of the voting power represented at the Annual Meeting in person or by proxy and voting on the matter, shall be required for the approval of such resolution provided that (i) such a majority includes at least a majority of the ordinary shares voted by shareholders who are not controlling shareholders of the Company nor are they shareholders who have a personal interest in the approval of the proposal set forth in this Item 6; *or* (ii) the total number of shares of non-controlling shareholders and non-interested shareholders voted against the proposal in this Item 6 does not exceed two percent (2%) of the total voting rights in the Company. Votes abstaining shall not be taken into account in counting the above-referenced shareholder votes.

A shareholder must inform the Company before the vote (or if voting by proxy, indicate on the proxy card) whether or not such shareholder is a controlling shareholder or has a personal interest (and a description thereof, if such exists), and failure to do so disqualifies the shareholder from participating in the vote for this Proposal 6.

Board of Directors' Recommendation:

THE BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE "FOR" THE PROPOSED RESOLUTION.

PROPOSAL SEVEN — APPROVAL OF GRANT OF OPTION AND RESTRICTED STOCK UNITS TO MR. KEN BERLIN, THE CHIEF EXECUTIVE OFFICER OF THE COMPANY

Background

According to the Companies Law, as amended in Amendment No. 20, the terms of employment of a chief executive officer should be approved (in the following) by (i) the compensation committee, (ii) the board of directors and (iii) by the general meeting of shareholders of the Company as set forth below.

The Company's Compensation Committee and Board resolved that, subject to the approval of the Company's shareholders at the Annual Meeting, that Mr. Ken Berlin shall be entitled to receive, a grant of (i) an option to purchase up to 220,000 Ordinary Shares of the Company at an exercise price per share equal to the closing price on the date of the shareholder approval of such grant, with 25% of the grant vesting at the first anniversary of the grant and then in equal installments each quarter during the next two years (altogether the vesting period shall be three years) and such option shall expire seven years after the date of grant, unless it expires earlier in accordance with the terms of the GSIP, and 45,000 Restricted Stock Units ("RSUs") vesting one year from the date of the shareholder approval of such grant. The option and RSUs are granted and otherwise subject to the same terms and conditions as applicable to options and RSUs granted under the GSIP, and will be added to the GSIP independently of the addition proposed in Item 5 of the meeting's agenda.

THE BOARD OF DIRECTORS WILL PRESENT THE FOLLOWING RESOLUTION AT THE MEETING:

"RESOLVED: To approve, in accordance with Section 272(c1)(1) of the Companies Law, that Mr. Ken Berlin, the Chief Executive Officer of the Company, shall be entitled to receive a grant of (i) an option to purchase up to 220,000 Ordinary Shares of the Company at an exercise price per share equal to the closing price on the date of the shareholder approval of such grant, with 25% of the grant vesting at the first anniversary of the grant and then in equal installments each quarter during the next two years (altogether the vesting period shall be three years) and that such option will expire seven years after the date of grant, unless it expires earlier in accordance with the terms of the Company's GSIP and (ii) 45,000 RSUs, vesting one year from the date of the shareholder approval of such grant. The option and RSUs are granted and otherwise subject to the same terms and conditions as applicable to options and RSUs granted under the GSIP, and will be added to the GSIP independently of the addition proposed in Item 5 of the meeting's agenda.

An affirmative vote of the holders of a majority of the voting power represented at the Annual Meeting in person or by proxy and voting on the matter, shall be required for the approval of such resolution provided that (i) such a majority includes at least a majority of the ordinary shares voted by shareholders who are not controlling shareholders of the Company nor are they shareholders who have a personal interest in the approval of the proposal set forth in this Item 7; *or* (ii) the total number of shares of non-controlling shareholders and non-interested shareholders voted against the proposal in this Item 7 does not exceed two percent (2%) of the total voting rights in the Company. Votes abstaining shall not be taken into account in counting the above-referenced shareholder votes.

A shareholder must inform the Company before the vote (or if voting by Proxy Card, indicate on the proxy card) whether or not such shareholder is a controlling shareholder or has a personal interest (and a description thereof, if such exists), and failure to do so disqualifies the shareholder from participating in the vote for this Proposal 7.

Board of Directors' Recommendation:

THE BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE "FOR" THE PROPOSED RESOLUTION.

PROPOSAL EIGHT — INCREASE OF SHARE CAPITAL

Background

As of October 21, 2015, the registered (authorized) share capital of the Company was NIS 24,000,000 divided into 40,000,000 Ordinary Shares, nominal (par) value NIS 0.6 each, and the Company's issued and outstanding share capital was 18,177,361 Ordinary Shares (not including 3,257 ordinary shares held as treasury shares under Israeli law).

In addition, the Company has outstanding warrants to purchase 2,002,209 ordinary shares and options to purchase approximately 1,417,807 ordinary shares that have been awarded under the Company's incentive plans (including the options and RSUs that will be awarded to Mr. Ken Berlin, assuming the approval of the resolution under Proposal Seven above, and including options awarded to Dr. Sidransky, assuming the approval of the resolution under Proposal Two above) and an additional 200,631 ordinary shares will be available for future grants under such plans. In order to provide the Company with more flexibility in raising capital in the future to fund its ongoing activities and to have enough authorized and unreserved ordinary shares available to cover the issuance of shares issuable upon conversion or exercise of all the outstanding warrants and options, it is proposed to increase the Company's registered (authorized) share capital by NIS 12,000,000 divided into 20,000,000 ordinary shares, nominal (par) value NIS 0.6 each (the "**Capital Increase**"). As a result, following such increase, the registered (authorized) share capital of the Company will be NIS 36,000,000 divided into 60,000,000 ordinary shares, nominal (par) value NIS 0.6 each.

Accordingly, the Board is recommending to shareholders to approve the Capital Increase and to amend the Articles to reflect such Capital Increase.

IT IS PROPOSED THAT THE FOLLOWING RESOLUTIONS BE ADOPTED AT THE ANNUAL MEETING:

"RESOLVED,

- (1) That the registered (authorized) share capital of the Company be, and it hereby is, increased by NIS 12,000,000, so that following such increase the registered (authorized) share capital of the Company will be NIS 36,000,000 divided into 60,000,000 ordinary shares, nominal (par) value NIS 0.6 each.
- (2) That Article 4(a) of the Company's Articles of Association shall be deleted and replaced in its entirety with the following new Article 4(a):
"The registered (authorized) share capital of the Company is twenty four million New Israeli Shekels (NIS 36,000,000) divided into forty million (60,000,000) Ordinary Shares, nominal (par) value NIS 0.6 per share."

An affirmative vote of a majority of the shares represented and voting at the Annual Meeting in person or by proxy is required for the approval of such resolution.

Board of Directors' Recommendation:

THE BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE "FOR" THE PROPOSED RESOLUTION.

ADDITIONAL REQUIRED DISCLOSURES

The complete form of the proposed resolutions and relevant documents may be inspected at the Company's registered office at 10 Plaut St., Rabin Science Park, Rehovot, 7670609, Israel, during normal business hours, upon prior coordination with Adv. Yael Rosen, Legal Counsel, at +972-73-222-0700 and on the Company's website at www.rosettagenomics.com.

In accordance with the Companies Law and regulations promulgated thereunder, any shareholder of the Company may submit to the Company a position statement on its behalf, expressing its position on an agenda item for the meeting to the Company's offices at the above-mentioned address, Attention: Oded Biran, Chief Legal Officer, or by facsimile to +972-73-2220701, no later than November 23, 2015. Any position statement so received will be furnished to the SEC on Form 6-K, and will be made available to the public on the SEC's website at <http://www.sec.gov>.

The Company's Board of Directors may send position statements in response to shareholder's position statements no later than November 28, 2015.

A shareholder or shareholders holding shares representing at least 5% of the total voting rights in the Company on November 2, 2015, (such number being 908,869 shares), is entitled, either in person or by proxy, to review the proxy cards at the Company's registered office at 10 Plaut St., Rabin Science Park, Rehovot, 7670609, Israel, during normal business hours.

It should be noted that following the date hereof, the agenda of the Annual Meeting may be altered, including the adding of items to the agenda, and position statements may be published. The updated agenda and position statements will be made available to the public on the SEC's website at <http://www.sec.gov>.

The final date on which the Company may submit a revised Proxy Statement following the adding of items to the agenda at the request of a shareholder is November 10, 2015

According to section 4(d) of the Companies Regulations (Notification of general assemblies and by-type assemblies in a public company and adding an item to the agenda), 2000, the following table presents information regarding compensation actually received by our five most highly paid executive officers during the year ended December 31, 2014 (in \$USD):

<u>Name and position</u>	<u>Salary</u>	<u>Employer 401K*</u>	<u>vehicle expenses</u>	<u>Pension**</u>	<u>Bonus paid</u>	<u>Equity***</u>	<u>Total</u>
Mr. Ken Berlin Chief Executive Officer	500,000	16,000	18,000		300,000	263,000	1,097,000
Dr. Robert Wassman Former Chief Medical Officer	264,000	8,000			49,000	34,000	355,000
Mr. Oded Biran Chief Legal Officer	225,000	7,000	12,000		48,000	18,000	310,000
Mr. Ron Kalfus Chief Financial Officer	120,000		14,000	21,000	21,000	18,000	194,000
Ms. Dganit Bar Chief Science Officer	127,000		12,000	22,000	36,000	33,000	230,000

* 401K – in the U.S., this is the tax-qualified, defined-contribution pension account defined in subsection 401(k) of the Internal Revenue Code.

** Pension is for provided for Israel based employees only.

*** Equity is calculated as the value of options awarded, at the time of grant.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We are subject to the information reporting requirements of the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”), applicable to foreign private issuers and fulfill these requirements by filing reports with the SEC. You may read and copy any document we file with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You may call the SEC at 1-800-SEC-0330 for further information about the SEC's public reference room. Our SEC filings are also available to the public at the SEC's website at www.sec.gov and through the “Investors – SEC Filing” section of our website at www.rosettagenomics.com.

As a foreign private issuer, we are exempt from the rules under the Exchange Act related to the furnishing and content of proxy statements. The filing of the Notice of Meeting and this proxy statement as an exhibit to a Report on Form 6-K with the SEC should not be taken as an admission that we are subject to the proxy rules under the Exchange Act.

By order of the Board of Directors,

/s/ Brian A. Markison

Brian A. Markison
Chairman of the Board

ANNUAL GENERAL MEETING OF SHAREHOLDERS OF

ROSETTA GENOMICS LTD.

Company no. 51-292138-8

10 Plaut St., Rabin Science Park

Rehovot, 7670609

Israel

Phone number +972-73-222-0700

Date of Annual General Meeting – December 3, 2015

NOTICE OF INTERNET AVAILABILITY OF PROXY MATERIAL

The notice of meeting, proxy statement and proxy card
are available at www.rosettagenomics.com

**Please sign, date and mail
your proxy card in the
envelope provided as soon
as possible.**

**The record date for determining the shareholders entitled to vote at the Annual Meeting
the close of trading on November 2, 2015**

Please detach along perforated line and mail in the envelope provided

<p>THE BOARD OF DIRECTORS RECOMMENDS A VOTE “FOR” EACH OF THE PROPOSALS PLEASE SIGN, DATE AND RETURN PROMPTLY IN THE ENCLOSED ENVELOPE. PLEASE MARK YOUR VOTE IN BLUE OR BLACK INK AS SHOWN HERE</p>						
<p>THIS PROXY WILL BE VOTED AS DIRECTED OR, IF NO SPECIFIC INSTRUCTION IS GIVEN WITH RESPECT TO THE MATTER TO BE ACTED ON - THE SHARES REPRESENTED BY A SIGNED PROXY CARD WILL BE VOTED AS “ABSTAIN” FOR EACH PROPOSAL’.</p>		<p>FOR</p>	<p>AGAINST</p>	<p>ABSTAIN</p>	<p>ARE YOU A CONTROLLING SHAREHOLDER OR HAVE ANY “PERSONAL INTEREST” IN THE MATTER¹</p>	
					<p>YES*</p>	<p>NO</p>
<p>Please sign, date and promptly return this proxy in the enclosed return envelope, which is postage prepaid if mailed in the United States.</p>	<p>1. To re-elect Dr. David Sidransky to serve as a Class II director, for a three year term commencing on the date of his election at the Annual Meeting and until the Annual General Meeting of the Company’s shareholders to be held in 2018 in accordance with the Company’s Articles of Association.</p>	<p>••</p>	<p>••</p>	<p>••</p>		
	<p>2. To grant Dr. David Sidransky an option to purchase up to 24,000 ordinary shares of the Company, par value 0.6 NIS (“Ordinary Shares”), which will vest in equal yearly installments, over a period of three years.</p>	<p>••</p>	<p>••</p>	<p>••</p>		
	<p>3. To re-elect Mr. Joshua Rosensweig to serve as a Class II director, for a three year term commencing on the date of his election at the Annual Meeting and until the Annual General Meeting of the Company’s shareholders to be held in 2018 in accordance with the Company’s Articles of Association.</p>					
	<p>4. To approve of the re-appointment of Kost, Forer, Gabbay & Kasierer, a member firm of Ernst & Young Global (“KFGK”), as the Company’s independent registered public</p>	<p>••</p>	<p>••</p>	<p>••</p>		

	<p>accounting firm for the fiscal year ending December 31, 2015, and until the next Annual Meeting, and to authorize the Audit committee and the Board of Directors of the Company to determine the remuneration of KFGK in accordance with the volume and nature of their services.</p>					
5.	<p>To approve the addition of 500,000 Ordinary Shares, to the shares authorized for issuance under the Company's Global Share Incentive Plan ("GSIP"), so that the total number of Ordinary Shares authorized for issuance under the GSIP will equal 2,303,739.</p>	..	..	..
6.	<p>To approve, as of the date of Annual Meeting, in accordance with Section 272(c1)(1) of the Israeli Companies Law, 5759-1999 (the "Companies Law") the extension of the employment terms of Mr. Ken Berlin, the Chief Executive Officer of the Company (the "CEO"), until the Company's 2017 Annual Shareholder Meeting, and to amend certain terms of his employment, so that his annual bonus eligibility would increase to \$450,000 USD, and that the definition of Change of Control be amended in his employment agreement, as specified in the adjoining proxy.</p>	..	..	..	..	..
7.	<p>To approve a grant of an option to Mr. Ken Berlin to purchase up to 220,000 Ordinary Shares at an exercise price per share equal to the closing price on the date of the approval of such a grant by the shareholders, with 25% of the grant vesting at the first anniversary of the grant and then in equal installments each quarter during the next two years (altogether the vesting period shall be three years), unless they expire earlier in accordance with the terms of the GSIP, and 45,000 Restricted Stock Units ("RSUs") , which will vest one year after the approval of the grant by the shareholders. The options and RSUs are granted and otherwise subject to the same terms and conditions as applicable to options and RSUs granted under the GSIP, and will be added to the GSIP independently of the addition proposed in Item 5 above.</p>	..	..	..	..	..
8.	<p>To approve an increase of the Company's registered (authorized) share capital and the corresponding amendment to the Articles of Association, by NIS 12,000,000 divided into 20,000,000 ordinary</p>	..	..	..

	shares, nominal (par) value NIS 0.6 each that following such increase, the registered (authorized) share capital of the Company will be NIS 36,000,000 divided into 60,000,000 ordinary shares, nominal (par) value NIS 0.6 each.					
	Please sign exactly as your name or names appear on this Proxy. When shares are held jointly, each holder should sign. When signing as executor, administrator, attorney, trustee or guardian, please give full title as such. If the signer is a corporation, please sign full corporate name by duly authorized officer, giving full title as such. If signer is a partnership, please sign in partnership name by authorized person. Dated: _____, 2015 _____ Signature _____ Signature					

*** Provide details**

1 A shareholder who fails to mark whether or not he has a Personal Interest and whether or not such Shareholder is a “controlling shareholder”, and failure to do so or to provide a description thereof if marked “yes”, disqualifies the shareholder from participating in the vote.

According to the Companies Law a shareholder will be deemed to have a personal interest if he or she has personal interest in an act or transaction of the company, including a personal interest of his or her relative or of a corporate body in which that person or a relative of that person is a holder of 5% or more of that corporate body’s outstanding shares or voting rights, is a director or general manager, or in which he or she has the right to appoint at least one director or the general manager. For that matter according to the Companies Law - “Personal interest” does not apply to a personal interest stemming merely from the fact that the office holder is also a shareholder in the company. In addition, the term “personal interest” also includes the personal interest of a person voting under a proxy given by another person, even if such appointing person has no personal interest in the proposed act or transaction. In addition, the vote of a person voting under a proxy given by a person having a personal interest in the proposed act or transaction, even if the person voting under the proxy has no personal interest, shall be deemed as a vote made by a person having a personal interest in the proposed act or transaction. The Companies Law defines a “relative” as a person’s spouse, sibling, parent, grandparent or descendant, as well as the descendant, sibling or parent of a person’s spouse, or the spouse of any of the foregoing.

According to the Companies Law, a controlling shareholder is any shareholder that has the ability to direct the activities of the company, including a shareholder holding 25% or more of the voting rights if no other shareholder owns more than 50% of the voting rights in the company, but excluding a shareholder whose power derives solely from his or her position on the board of directors or any other position with the company. If two or more shareholders are interested parties in the same transaction, their shareholdings are combined for the purposes of calculating percentages. A shareholder holding 50% or more of the voting rights of the Company is presumed to be a controlling shareholder.

ROSETTA GENOMICS LTD.

**For the Annual General Meeting of Shareholders
To Be Held On December 3, 2015**

THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS

The undersigned shareholder of Rosetta Genomics Ltd. (the "Company") hereby appoints Oded Biran of the Company, with full power of substitution, the true and lawful attorney, agent and proxy of the undersigned, to vote, as designated on the reverse side, all of the Ordinary Shares of the Company which the undersigned is entitled in any capacity to vote at the Annual General Meeting of Shareholders of the Company to be held at the offices of the Company, 10 Plaut St., Rabin Science Park Rehovot, 7670609 on December 3, 2015 at 10:00 a.m. (ET) and all adjournments and postponements thereof.

The undersigned hereby acknowledges receipt of the Notice of Annual General Meeting and the Proxy Statement accompanying such Notice, revokes any proxy or proxies heretofore given to vote upon or act with respect to the undersigned's shares and hereby ratifies and confirm all that the proxy or their substitutes may lawfully do by virtue hereof.

This proxy when properly executed will be voted in accordance with the manner directed herein by the undersigned shareholder.

(CONTINUED AND TO BE SIGNED ON REVERSE SIDE)