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**SECURITIES AND EXCHANGE COMMISSION**

WASHINGTON, D.C. 20549

**FORM 6-K**

**REPORT OF FOREIGN PRIVATE ISSUER  
PURSUANT TO RULE 13a-16 OR 15d-16 OF  
THE SECURITIES EXCHANGE ACT OF 1934**

*For the month of April 2012*

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**BioLineRx Ltd.**

(Translation of Registrant's name into English)

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**P.O. Box 45158  
19 Hartum Street  
Jerusalem 91450, Israel**

(Address of Principal Executive Offices)

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Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F:

**Form 20-F**       **Form 40-F**

Indicate by check mark whether the registrant by furnishing the information contained in this form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934:

**Yes**       **No**

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The Registrant announces that it will hold the 2012 Annual General Meeting of Shareholders on May 15, 2012 at 11:00 a.m. (Israel time) at the Registrant's office, 19 Hartum Street, Jerusalem, Israel. Attached hereto as Exhibits 1 and 2 are, respectively, the Notice of Annual General Meeting and Proxy Statement, and Proxy Card.

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Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

**BioLineRx Ltd.**

By: /s/ Philip Serlin  
Philip Serlin  
Chief Financial and Operating  
Officer

Dated: April 5, 2012

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**BIOLINERX LTD.**

**NOTICE OF  
2012 ANNUAL GENERAL MEETING OF SHAREHOLDERS**

May 15, 2012

Notice is hereby given that the Annual General Meeting of the shareholders (the “**Meeting**”) of BioLineRx Ltd. (the “**Company**”) will be held at the offices of the Company at 19 Hartum St., Har Hotzvim, Jerusalem, Israel, on May 15, 2012 at 11:00 a.m. for the following purposes:

1. TO VOTE ON THE PROPOSAL TO RE-ELECT four directors for the coming year.
2. TO VOTE ON THE PROPOSAL TO RE-APPOINT Kesselman & Kesselman, Certified Public Accountants (Isr.), a member of PricewaterhouseCoopers International Limited, as the independent public auditors of the Company for the year ending December 31, 2012 and to authorize the Audit Committee of the Board of Directors to fix the compensation of said auditors in accordance with the amount and nature of their services.
3. TO VOTE ON THE PROPOSAL TO APPROVE an increase in the Company’s registered share capital and a corresponding amendment to Article 4.1 of the Company’s Articles of Association.
4. TO VOTE ON THE PROPOSAL TO APPROVE an amendment to Article 6.1 of the Company’s Articles of Association relating to the authority to execute share certificates.
5. TO REVIEW the Company’s Annual Report and financial statements for the year ended December 31, 2011, and to transact such other business as may properly come before the Meeting.

Shareholders of record at the close of business on April 10, 2012 (the “**Record Date**”) are entitled to notice of and to vote at the Meeting. All shareholders are cordially invited to attend the Meeting in person.

Whether or not you plan to attend the Meeting, you are urged to promptly complete, date and sign the enclosed proxy and to mail it in the enclosed envelope, which requires no postage if mailed in the United States. The proxy card must be received by the Company no later than close of business on May 13, 2012 to be validly included in the tally of ordinary shares voted at the Meeting. Return of your proxy does not deprive you of your right to attend the Meeting, to revoke the proxy or to vote your shares in person.

Beneficial owners who hold their shares through members of the Tel Aviv Stock Exchange (“**TASE**”) may either vote their shares in person at the Meeting by presenting a certificate signed by a member of the TASE which complies with the Israel Companies Regulations (Proof of Ownership for Voting in General Meetings) -2000 as proof of ownership of the shares, or send such certificate along with a duly executed proxy to the Company at 19 Hartum St., Har Hotzvim, Jerusalem, Israel, Attention: General Counsel.

Approval of the proposals to be presented at the Meeting requires the affirmative vote of shareholders present (in person, by proxy or by providing a written ballot) and holding our ordinary shares, nominal value New Israeli Shekels 0.01 each, amounting in the aggregate to the majority of the voting power of the shareholders who are present in person or by proxy or by providing a written ballot and voting on such proposal.

By Order of the Board of Directors,

BioLineRx Ltd.

April 5, 2012

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**PROXY STATEMENT**

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**BIOLINERX LTD.  
19 Hartum St.  
Post Office Box 45158  
Har Hotzvim, Jerusalem  
Israel, 91450**

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**2012 ANNUAL GENERAL MEETING OF SHAREHOLDERS**

May 15, 2012

The enclosed proxy is being solicited by our Board of Directors for use at our Annual General Meeting of shareholders (the “**Meeting**”) to be held on May 15, 2012 at 11:00 a.m., or at any adjournment thereof, at the offices of the Company at 19 Hartum St., Har Hotzvim, Jerusalem, Israel. The record date for determining which of our shareholders is entitled to notice of, and to vote at, the Meeting is established as of the close of trade on April 10, 2012 (the “**Record Date**”). On the date hereof, we have outstanding and entitled to vote 176,056,151 of our ordinary shares, nominal value New Israeli Shekels (“**NIS**”) 0.01 each (the “**Ordinary Shares**”).

**INFORMATION CONCERNING SOLICITATION AND VOTING**

**Record Date and Shares Outstanding**

You are entitled to vote at the Meeting if you were a shareholder at the close of trade on the Record Date. Subject to the terms described herein, you are also entitled to vote at the Meeting if you held Ordinary Shares through a bank, broker or other nominee which was a shareholder of record of the Company at the close of trade on the Record Date or which appeared in the participant listing of a securities depository on that date.

**Quorum, Voting, Solicitation and Revocation of Proxies.**

At least two shareholders who attend the Meeting in person or by proxy who hold or represent together at least 25% of the voting rights of our issued share capital will constitute a quorum for the Meeting. If a quorum is not present within half an hour from the time scheduled for the Meeting, the Meeting will be adjourned to the following week, at the same time and place, without it being necessary to notify our shareholders. A quorum at such adjourned meeting shall be any number of participants. Each outstanding Ordinary Share held by a shareholder is entitled to one vote.

Shareholders entitled to vote at the meeting may attend the Meeting in person and vote thereat, appoint a proxy or vote by written ballot. The proxy card must be received by the Company no later than close of business on May 13, 2012 to be validly included in the tally of Ordinary Shares voted at the Meeting. Please follow the instructions on the proxy card.

You may change your mind and cancel your proxy card by filing a written notice of revocation with the Company, by completing and returning a duly executed proxy card bearing a later date or by voting in person at the Meeting. Attendance at the Meeting will not in and of itself constitute revocation of proxy. Shares represented by a valid proxy card will be voted in favor of the proposed resolution to be presented at the Meeting, unless you clearly vote against a specific resolution.

Approval of the proposals to be presented at the Meeting requires the affirmative vote of shareholders present (in person, by proxy or by providing a written ballot) and holding our Ordinary Shares amounting in the aggregate to the majority of the voting power of the shareholders who are present in person, by proxy or by providing a written ballot and vote on such proposal.

**PROPOSAL 1**  
**ELECTION OF DIRECTORS**

Our Board has designated the persons named below for election to serve until the next Annual General Meeting of our shareholders. In the absence of instructions to the contrary, the persons named in the enclosed proxy will vote the ordinary shares represented thereby "For" the election of the directors listed below as a group. If any of such directors is unable to serve, the persons named in the proxy shall vote the ordinary shares for the election/re-election of such other nominee/director as the Board of Directors may propose. The following nominees have advised the Company that they will to serve as directors upon election.

The following provides certain relevant information concerning the directors, including their principal occupation during at least the past five years.

<u>Director</u>	<u>Age</u>	<u>Principal Occupation</u>
Aharon Schwartz, Ph.D.	69	Dr. Schwartz has served as the Chairman of our Board of Directors since 2003. He served in a number of positions in Teva from 1975 through 2011, the most recent being Vice President, Head of Teva Innovative Ventures from 2008. Dr. Schwartz also served as Chairman of DenX Ltd. and Immudar. He is currently a non-executive member of the boards of numerous life science companies, including Clal Biotechnology Industries Ltd. (TASE:CBI), Proteologic Ltd. and Mediwound Ltd. Dr. Schwartz received his Ph.D. in organic chemistry from the Weizmann Institute, his M.Sc. in organic chemistry from the Technion Institute of Technology and a B.Sc. in chemistry and physics from the Hebrew University of Jerusalem.
Michael Anghel, Ph.D.	72	Dr. Anghel has served on our Board of Directors since September 2010. From 1977 to 1999, he led the Discount Investment Corporation Ltd. (of the IDB Group) activities in the fields of technology and communications. Dr. Anghel was instrumental in founding Tevel, one of the first Israeli cable television operators and later in founding Cellcom Israel Ltd. (NYSE:CEL), the second Israeli cellular operator. In 1999, he founded CAP Ventures, an advanced technology investment company. From 2004 to 2005, Dr. Anghel served as CEO of DCM, the investment banking arm of the Israel Discount Bank (TASE:DSCT). He has been involved in various technology enterprises and has served on the Boards of Directors of various major Israeli corporations and financial institutions including Elron Electronic Industries Ltd. (TASE:ELRN), Elbit Systems Ltd. (NASDAQ:ESLT, TASE:ESLT), Nice Systems (NASDAQ:NICE), Gilat Satellite Networks Ltd. (NASDAQ:GILT), American Israeli Paper Mills (now Hadera Paper Ltd. (AMEX:AIP)), Maalot (the Israeli affiliate of Standard and Poor's) and Hapoalim Capital Markets. He currently serves on the Boards of Directors of Partner Communications Company, Ltd. (NASDAQ:PTNR, TASE:PTNR), Syneron Medical Ltd. (NASDAQ:ELOS), Evogene Ltd. (TASE:EVGN), Gravity Visual Effects and Design Ltd., Dan Hotels Ltd. (TASE:DANH), Orbotech Ltd. (NASDAQ:ORBK, GSM:ORBK) and the Strauss-Group Ltd. (TASE:STRS). He is also the chairman of the Center for Educational Technology. Prior to launching his business career, Dr. Anghel served as a full-time member of the Recanati Graduate School of Business Administration of the Tel Aviv University, where he taught finance and corporate strategy. He currently serves as Chairman of the Tel Aviv University's Executive Program. Dr. Anghel holds a B.A. (Economics) from the Hebrew University in Jerusalem and an MBA and Ph.D. (Finance) from Columbia University, New York.
Yakov Friedman	43	Mr. Friedman has served on our Board of Directors since 2007. Mr. Friedman has worked as a financial analyst and trader for Friedberg Mercantile Group since 2001. Mr. Friedman serves on the board of directors and as treasurer or secretary of a number of charities and not-for-profit organizations. Mr. Friedman holds an LLB from Osgoode Hall Law School of York University, a BAS in Administrative Studies and an MBA in Finance from York University.
Raphael Hofstein, Ph.D.	62	Dr. Hofstein has served on our Board of Directors since 2003, and has served on our Audit Committee since 2007. Dr. Hofstein has served as the President and Chief Executive Officer of MaRS Innovation (a commercialization company of the University of Toronto and 10 affiliated hospitals) since June 2009. From 2000 through June 2009, Dr. Hofstein was the President and Chief Executive Officer of Hadasit Ltd., or Hadasit, the technology transfer company of Hadassah Hospital. He has served as chairman of the board of directors of Hadasit since 2006. Prior to joining Hadasit, Dr. Hofstein was the President of Mindsense Biosystems Ltd. and the Business Unit Director of Ecogen Inc. and has held a variety of other positions, including manager of R&D and chief of immunochemistry at the International Genetic Science Partnership. Dr. Hofstein serves on the board of directors of numerous companies, including Hadasit Bio-Holdings Ltd. (TASE:HDST). Dr. Hofstein received his Ph.D. and M.Sc. from the Weizmann Institute of Science, and his B.Sc. in chemistry and physics from the Hebrew University in Jerusalem. Dr. Hofstein completed postdoctoral training at Harvard Medical School in both the departments of biological chemistry and neurobiology.

Our Articles of Association specify that the number of directors will be at least five but not more than ten. The current Board of Directors consists of six members.

Our Board of Directors will present the following resolution for adoption at the Meeting:

**“RESOLVED, that the election of Aharon Schwartz, Michael Anghel, Yakov Friedman and Raphael Hofstein to serve as directors of the Company for the coming year until the next annual general meeting of the Company’s shareholders is hereby approved.”**

The affirmative vote of the holders of a majority of the voting power represented at the Meeting is necessary for the approval of the foregoing resolution.

**PROPOSAL TWO  
APPOINTMENT OF INDEPENDENT PUBLIC AUDITOR**

Kesselman & Kesselman, a member of PricewaterhouseCoopers International Limited, have audited the Company’s financial statements beginning with the financial statements for the year ended December 31, 2011. Except as the Company’s auditors, there is no other affiliation between such firm and the Company.

The Companies Law requires shareholder approval of the appointment of the Company’s independent public accountants for the fiscal year ending December 31, 2012. Our Board of Directors recommended and upon such recommendation, at the last Annual General Meeting, the Company’s shareholders appointed the accounting firm of Kesselman & Kesselman, a member of PricewaterhouseCoopers International Limited, as our independent registered public accounting firm to perform the audit of our consolidated financial statements for the fiscal year ending December 31, 2011. The Board of Directors believes that the appointment of Kesselman & Kesselman as the Company’s independent registered public accounting firm to perform the audit of the Company’s consolidated financial statements for the fiscal year ending December 31, 2012 is appropriate and in the interests of the Company and its shareholders. Subject to the approval of this proposal, the Audit Committee of the Board of Directors will fix the compensation of Kesselman & Kesselman in accordance with the volume and nature of their services to the Company.

In compliance with the Companies Law, our Board of Directors will present the following resolution for adoption at the Meeting:

**“RESOLVED, to appoint Kesselman & Kesselman, Certified Public Accountants (Isr.), a member of PricewaterhouseCoopers International Limited, as the independent public auditors of the Company for the year ending December 31, 2012 and to authorize the Audit Committee of the Board of Directors to fix the compensation of said auditors in accordance with the amount and nature of their services.”**

The affirmative vote of the holders of a majority of the voting power represented at the Meeting is necessary for the approval of the foregoing resolution.

Our Board of Directors recommends a vote "FOR" approval of the proposed appointment of Kesselman & Kesselman as the independent public auditors of the Company for the year ending December 31, 2012 and the authorization of the Audit Committee of the Board of Directors to fix their compensation.

**PROPOSAL THREE**  
**INCREASE IN THE COMPANY'S SHARE CAPITAL AND CORRESPONDING AMENDMENT TO**  
**ARTICLE 4.1 OF THE COMPANY'S ARTICLES OF ASSOCIATION**

At the Meeting, we will propose that an increase in the share capital of the Company be approved.

The registered share capital of the Company is NIS 2,500,000, divided into 250,000,000 ordinary shares with a nominal value of NIS 0.01 each. As of April 5, 2012, the Company had 176,056,151 Ordinary Shares issued and outstanding. As of the same date, the Company had an additional 32,212,787 shares reserved for purposes of our 2003 Share Incentive Plan and for the exercise of outstanding warrants, leaving only 41,731,062 authorized but unissued shares available for other purposes.

Under the Companies Law, a company may not issue shares in excess of its registered share capital. The Company wishes to have a sufficient reserve of authorized but unissued shares available for corporate purposes, including without limitation, offerings of its shares and additional grants of options to grantees eligible under its 2003 Share Incentive Plan or any other option plan which may be adopted by the Company in the future.

Therefore, we propose to increase the Company's share capital from NIS 2,500,000 to NIS 7,500,000 divided into 750,000,000 ordinary shares of a nominal value of one agora (NIS 0.01) each.

Our Board of Directors will present the following resolution for adoption at the Meeting:

**"RESOLVED, that the Company's registered share capital be increased from NIS 2,500,000 divided into 250,000,000 ordinary shares of a nominal value of one agora (NIS 0.01) each to NIS 7,500,000 divided into 750,000,000 ordinary shares of a nominal value of one agora (NIS 0.01) each and that Article 4.1 of the Company's Articles of Association be amended accordingly."**

The affirmative vote of the holders of a majority of the voting power represented at the Meeting is necessary for the approval of the foregoing resolution.

Our Board of Directors recommends a vote "FOR" approval of the proposed increase in registered share capital and corresponding amendment to the Company's Articles of Association.

**PROPOSAL FOUR**  
**AMENDMENT TO ARTICLE 6.1 OF THE COMPANY'S ARTICLES OF ASSOCIATION**

At the Meeting, we will propose to approve an amendment to Article 6.1 of our Articles of Association for the purpose of broadening the signature authority with respect to the Company's share certificates.

Article 6.1 of the Articles of Association provides that a share certificate must be signed by a least one director. Since no member of our management is a director, it would increase the efficiency of the administration of the Company if members of senior management were given the authority to sign share certificates. Therefore, it is proposed that such authority be given to the Chief Executive Officer and the Chief Financial and Operating Officer.

Our Board of Directors will present the following resolution for adoption at the Meeting:

**RESOLVED, that the last sentence of Article 6.1 of the Company's Articles of Association, which currently provides as follows:**

**'Each share certificate shall bear the signature of at least one director, together with the Company stamp or its printed name'**

**be deleted in its entirety and replaced with the following:**

**'Each share certificate shall bear the signature of at least one director, the Chief Executive Officer or the Chief Financial and Operating Officer, together with the Company stamp or its printed name.'**"

The affirmative vote of the holders of a majority of the voting power represented at the Meeting is necessary for the approval of the foregoing resolution.

Our Board of Directors recommends a vote "FOR" the amendment to Article 6.1 of the Company's Articles of Association as proposed in this proxy statement.

**PROPOSAL FIVE**  
**REVIEW THE COMPANY'S ANNUAL REPORT AND FINANCIAL STATEMENTS FOR THE**  
**YEAR ENDED DECEMBER 31, 2011, AND TRANSACT SUCH OTHER BUSINESS AS MAY**  
**PROPERLY COME BEFORE THE MEETING**

The audited financial statements of the Company for the fiscal year ended December 31, 2011 were filed together with the Company's Annual Report on Form 20-F, which was filed on March 22, 2012 with the Securities and Exchange Commission (the "SEC") and is available at its website, [www.sec.gov](http://www.sec.gov), and at the Magna website of the Israel Securities Authority ("ISA") at [www.magna.isa.gov.il](http://www.magna.isa.gov.il). The Company will hold a discussion with respect to the Annual Report and financial statements at the Meeting. This item will not involve a vote by the shareholders.

The Company's management is not aware of any other business to be transacted at the Meeting. However, if any other matters are properly presented to the Meeting, the persons named as proxies in the enclosed form of proxy will vote upon such matters in accordance with their best judgment.

**Where to Find More Information**

We are subject to the information reporting requirements of the U.S. Securities Exchange Act of 1934, as amended (the "Exchange Act"), applicable to foreign private issuers and we fulfill the obligations with respect to those requirements by filing reports with the SEC. Our filings with the SEC may be inspected without charge at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Information on the operation of the Public Reference Room can be obtained by calling the SEC at 1-800-SEC-0330. Our SEC filings are also available to the public from the SEC's website at [www.sec.gov](http://www.sec.gov) and the ISA's website at [www.magna.isa.gov.il](http://www.magna.isa.gov.il).

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 circulation of this proxy statement and related notice should not be taken as an admission that we are subject to those proxy rules. Furthermore, our officers, directors and principal shareholders are exempt from the reporting and "short-swing" profit recovery provisions contained in Section 16 of the Exchange Act and the rules thereunder, with respect to their purchases and sales of securities. Lastly, we are not required under the Exchange Act to file periodic reports and financial statements with the SEC as frequently or as promptly as United States companies whose securities are registered under the Exchange Act.

YOU SHOULD RELY ONLY ON THE INFORMATION CONTAINED IN THIS PROXY STATEMENT OR THE INFORMATION FURNISHED TO YOU IN CONNECTION WITH THIS PROXY STATEMENT WHEN VOTING ON THE MATTERS SUBMITTED TO SHAREHOLDER APPROVAL HEREUNDER. WE HAVE NOT AUTHORIZED ANYONE TO PROVIDE YOU WITH INFORMATION THAT IS DIFFERENT FROM WHAT IS CONTAINED IN THIS DOCUMENT. THIS PROXY STATEMENT IS DATED APRIL 5, 2012. YOU SHOULD NOT ASSUME THAT THE INFORMATION CONTAINED IN THIS DOCUMENT IS ACCURATE AS OF ANY DATE OTHER THAN APRIL 5, 2012, AND THE MAILING OF THIS DOCUMENT TO SHAREHOLDERS SHOULD NOT CREATE ANY IMPLICATION TO THE CONTRARY.

Shareholders are urged to complete and return their proxies promptly in order to, among other things, ensure the presence of a quorum at the Meeting and to avoid the expense of additional solicitation. If the accompanying proxy is properly executed (including the indication of a vote on the proposed matters) and returned in time for voting, the shares represented thereby will be voted as indicated thereon. IF NO SPECIFICATION IS MADE, AND EXCEPT AS OTHERWISE MENTIONED IN THIS PROXY STATEMENT, THE ORDINARY SHARES REPRESENTED BY THE PROXY WILL BE VOTED IN FAVOR OF THE PROPOSALS DESCRIBED IN THIS PROXY STATEMENT.

By Order of the Board of Directors

BioLineRx Ltd.

April 5, 2012

**BIOLINERX LTD.**

**For the Annual Meeting of Shareholders  
To Be Held On May 15, 2012**

**THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS**

The undersigned shareholder of BioLineRx Ltd. (the "**Company**") hereby appoints Norman Kotler and/or Raziel Fried, and each or either of them, the true and lawful attorney, agent and proxy of the undersigned, with full power of substitution, to vote, as designated below, all of the ordinary shares of the Company which the undersigned is entitled in any capacity to vote at the Annual Meeting of the shareholders of the Company which will be held at the offices of the Company at 19 Hartum St., Har Hotzvim, Jerusalem, Israel, on May 15, 2012 at 11 a.m. (local time), and all adjournments and postponements thereof.

(CONTINUED AND TO BE SIGNED ON REVERSE SIDE)

SEE REVERSE SIDE
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**THIS PROXY WHEN PROPERLY EXECUTED WILL BE VOTED AS DIRECTED HEREIN.  
IF NO DIRECTION IS INDICATED, THIS PROXY WILL BE VOTED "FOR" THE PROPOSALS HEREIN.**

**Please mark your vote as in this example x**

	FOR	AGAINST	ABSTAIN
1. TO RE-ELECT the following nominees to serve as directors of the Company for the coming year until the next annual general meeting of the Company's shareholders:	0	0	0
a. Aharon Schwartz	0	0	0
b. Michael Anghel	0	0	0
c. Yakov Friedman	0	0	0
d. Raphael Hofstein	0	0	0
2. TO RE-APPOINT Kesselman & Kesselman, a member of Pricewaterhouse-Coopers International Limited, as the independent public auditors of the Company for the year ending December 31, 2012 and to authorize the Audit Committee of the Board of Directors to fix the compensation of said auditors in accordance with the amount and nature of their services.	0	0	0
3. TO APPROVE an increase in the Company's registered share capital and a corresponding amendment to Article 4.1 of the Company's Articles of Association.	0	0	0
4. TO APPROVE an amendment to Article 6.1 of Company's Articles of Association, relating to the authority to execute Company share certificates.	0	0	0

Name: \_\_\_\_\_  
 Number of shares: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Date: \_\_\_\_\_

NOTE: Please mark date and sign exactly as the name(s) appear on this proxy. If the signer is a corporation, please sign the full corporate name by a duly authorized officer. Executors, administrators, trustees, etc. should state their full title or capacity. Joint owners should each sign.