

MICROBIX BIOSYSTEMS INC.

By-Law No. 4

being a by-law to regulate the
business and affairs of the Corporation

BE IT AND IT IS HEREBY MADE a by-law of the Corporation as follows:

1. Shareholders

1.01 Meetings - Subject to the *Business Corporations Act, 1982* (Ontario) (the "Act"), a meeting of shareholders of the Corporation shall be held at such place in or outside Ontario as the directors shall determine or, in the absence of such determination, at the place where the registered office of the Corporation is located.

1.02 Notice of Meetings - Notice of the time and place of a meeting of shareholders shall be sent not less than 21 days nor more than 50 days before the meeting to each shareholder entitled to vote at the meeting, to each director and to the auditors of the Corporation. Where there is more than one person registered as a shareholder in respect of any share or shares, such notice may be given to whichever of such persons is named first in the securities register of the Corporation and any notice so given shall be sufficient notice to all of them. In the event that it is impossible or impracticable for any reason whatsoever to give notice as otherwise permitted under the Act, notice may be given by advertisement published once in a newspaper in such cities or places as the directors may from time to time determine. A shareholder may at any time and in any manner waive notice of a meeting of shareholders. The accidental omission to give notice of any meeting to or the non-receipt of any notice by any person shall not invalidate any resolution passed or any proceeding taken at any meeting of shareholders.

1.03 Quorum - The holder or holders present in person or by proxy of not less than 25% of the outstanding shares of the Corporation entitled to be voted at a meeting of shareholders shall constitute a quorum for any meeting of shareholders, except that two persons present and each holding or representing by proxy at least one issued share of the Corporation shall constitute a quorum for any meeting of shareholders for purposes of selecting a chairman of the meeting, if necessary, and for the adjournment of the meeting to a fixed place and time, but they may not transact any other business.

1.04 Presiding Officer - The Chairman of the Board, or in his absence or if there is no Chairman of the Board, the President, or in his absence, any other director, shall preside as chairman at any meeting of shareholders. If all of the foregoing officers be absent, the persons present and entitled to vote at said meeting shall choose one of their number to act as chairman of the meeting.

1.05 Procedure at Meetings - The chairman of any meeting of shareholders shall conduct the meeting and shall determine the procedure thereof in all respects. His decision on all matters or things, including but without in any way limiting the generality of the foregoing, any question regarding the validity or invalidity of any instruments of proxy, shall be conclusive and binding upon the meeting. The chairman of a meeting of shareholders may, subject to any regulations made by the directors, in his discretion accept telegraphic, telex, cable or written communication, or electronic communication that produces a written copy, as to the authority of anyone claiming to vote on behalf of and to represent a shareholder notwithstanding that no instrument of proxy confirming such authority has been lodged with the Corporation, and any votes given in accordance with such telegraphic, telex, cable, written or electronic communication accepted by the chairman of the meeting shall be valid and shall be counted.

1.06 Persons Entitled To Be Present - The only persons entitled to attend a meeting of shareholders shall be those entitled to vote thereat, the directors, the auditors and others who, although not entitled to vote, are entitled or required under the laws governing the Corporation or the articles of the Corporation to be present at the meeting. Any other person may be admitted by permission of the chairman of the meeting or with the consent of the meeting.

1.07 Scrutineers - The chairman of a meeting of shareholders may or, if a ballot is to be taken, shall, appoint one or more persons, who need not be shareholders, to act as scrutineers at such meeting.

1.08 Voting - Voting at any meeting of shareholders shall be by a show of hands except where, either before or after any vote by show of hands, a ballot is required by the chairman of the meeting or is demanded by any person present and entitled to vote at the meeting. A requirement or a demand for a ballot may be withdrawn at any time prior to the taking of the ballot. Any ballot shall be taken in such manner and either at once or after adjournment, as the chairman of the meeting shall direct. Unless otherwise required by law or by the articles of the Corporation, a majority of the votes cast shall be sufficient for all purposes and shall be the decision of the meeting. A declaration by the chairman of any meeting that a vote taken upon a question has been carried or carried unanimously or by a particular majority, or lost or not carried by a particular majority, shall be conclusive evidence of the fact. In case of an equality of votes either upon a show of hands or upon a ballot, the chairman of the meeting shall not be entitled to a casting vote in addition to the vote or votes to which he is entitled as a shareholder or proxyholder. Where there is more than one person registered as a shareholder in respect of any share or shares and if more than one of such persons be present at any meeting in person or by proxy, that one of the said persons so present whose name stands first in the securities register of the Corporation in respect of such share or shares shall alone be entitled to vote in respect thereof.

1.09 One Shareholder Meeting - Where the Corporation has only one shareholder, or only one holder of any class or series of shares, the shareholder present in person or by proxy constitutes a meeting.

1.10 Dividends - A dividend payable in cash may be paid by cheque drawn on the Corporation's bankers or one of them, to the order of each registered holder of shares of the class or series in respect of which it has been declared and sent by prepaid ordinary mail or delivered to such registered holder at his address as recorded in the securities register of the Corporation, unless such holder has otherwise directed. In the case of joint holders the cheque shall, unless such joint holders have otherwise directed, be made payable to the order of all such joint holders and if more than one address is recorded in the securities register of the Corporation in respect of such joint holding, the cheque shall be mailed or delivered to the first address so recorded. The mailing or delivery of such cheque as aforesaid, unless the same is not paid on due presentation, shall satisfy and discharge all liability for the dividends to the extent of the sum represented thereby plus the amount of any tax, levy or duty which the Corporation was required to and did withhold. In the event of non-receipt of any dividend cheque by the person to whom it is sent as aforesaid, the Corporation shall issue to such person a replacement cheque for a like amount upon such terms as to indemnity, reimbursement of expenses and evidence of non-receipt as the directors or any officer or agent designated by them may from time to time prescribe, whether generally or in any particular case.

1.11 Addresses of Shareholders - Every shareholder shall furnish to the Corporation an address to which all notices and documents intended for the shareholder shall be sent. If the shareholder fails to furnish such an address, the Secretary may insert or cause to be inserted in the records of the Corporation, such address as may be considered to be the most likely to result in the notice or document reaching the shareholder. The Secretary of the Corporation may change or cause to be changed the address of any shareholder in accordance with any information believed by him to be reliable.

2. Directors

2.01 Written Resolutions - A resolution in writing, signed by all the directors entitled to vote on that resolution at a meeting of directors or a committee of directors, is as valid as if it had been passed at a meeting of directors or a committee of directors.

2.02 Place and Notice of Meetings - The directors may meet at any place within or outside Ontario upon notice given at least 48 hours prior to the time fixed for the meeting, provided that any director may at any time and in any manner waive notice of a meeting of directors. In any financial year a majority of the meetings of the board of directors need not be held at a place within Canada. Notice of the time and place of each meeting shall be delivered, mailed or communicated by telephone, telecopier or any other electronic means that produces a written copy to each director at his latest address as shown in the

records of the Corporation. Subject to the provisions of any resolution of the directors, meetings of the directors may be called at any time by the Chairman of the Board, the President or any two directors. Immediately after the annual meeting of shareholders in each year, a meeting of such of the newly elected directors as are then present may be held, provided that they constitute a quorum, without notice, for the appointment of officers of the Corporation or the transaction of such other business as may come before the meeting.

2.03 Number of Directors - The number of directors within the minimum and maximum set out in the articles of the Corporation may be fixed from time to time by special resolution of the shareholders or, if the special resolution empowers the directors to determine the number, by resolution of the directors.

2.04 Quorum and Canadian Majority - The quorum for meetings of the directors shall consist of the greater of three directors and two-fifths of the number of directors fixed pursuant to section 2.03 (rounded up to the nearest whole number) and, notwithstanding any vacancy among the directors, a quorum of directors may exercise all the powers of the directors. Directors shall not transact business at a meeting of directors unless a majority of directors present are resident Canadians, provided that directors may transact business at a meeting of directors where a majority of resident Canadian directors is not present if a resident Canadian director who is unable to be present approves in writing or by telephone or other communications facilities the business transacted at the meeting and a majority of resident Canadian directors would have been present had that director been present at the meeting.

2.05 Participation By Telephone - If all the directors present at or participating in the meeting consent, a meeting of directors or of a committee of directors may be held by means of such telephone, electronic or other communication facilities as permit all persons participating in the meeting to communicate with each other simultaneously and instantaneously, and a director participating in such a meeting by such means is deemed for the purposes of the Act to be present at that meeting.

2.06 Chairman - Subject to the provisions of any resolution of the directors, the Chairman of the Board, or in his absence or if there is no Chairman of the Board, the President, shall preside at meetings of the directors. If the Chairman of the Board and the President are absent or are unable or refuse or fail to act, the directors present may choose a chairman from among their number. The chairman at any meeting of directors may vote as a director.

2.07 Voting - Questions arising at a meeting of the directors shall be decided by a majority of the votes cast. In case of an equality of votes, the chairman of the meeting shall not have a casting vote in addition to the vote which he is entitled as a director.

2.08 Audit Committee - So long as the Corporation is an "offering Corporation" as defined in section 1(1)27 of the Act, the directors shall, and otherwise the directors may, elect annually from among their number an audit

committee to be composed of not fewer than three directors, a majority of whom are not officers or employees of the Corporation or any of its affiliates, to hold office until the next annual meeting of shareholders. Each member of the audit committee shall serve during the pleasure of the board of directors and, in any event, only so long as he shall be a director. The directors may fill vacancies in the audit committee by election from among their number. The audit committee shall have power to fix its quorum at not less than a majority of its members and to determine its own rules or procedures subject to any regulations imposed by the board of directors from time to time and to the following paragraph.

The auditor of the Corporation is entitled to receive notice of any meeting of the audit committee and, at the expense of the Corporation, to attend and be heard thereat and, if so requested by a member of the audit committee, shall attend every meeting of the committee held during the term of office of the auditor. The auditor of the Corporation or any member of the audit committee may call a meeting of the committee. The audit committee shall review the financial statements of the Corporation and shall report thereon to the board of directors of the Corporation prior to approval thereof by the board of directors and shall have such other powers and duties as made from time to time by resolution be assigned to it by the directors.

2.09 For the Protection of Directors and Officers - No director or officer for the time being of the Corporation shall be liable for the acts, receipts, neglects or defaults of any other director or officer or employee or for joining in any receipt or act for conformity or for any loss, damage or expense suffered or incurred by the Corporation through the insufficiency or deficiency of title to any property acquired by the Corporation or for or on behalf of the Corporation or for the insufficiency or deficiency of any security in or upon which any of the moneys of or belonging to the Corporation shall be placed out or invested or for any loss or damage arising from the bankruptcy, insolvency or tortious act of any person, firm or corporation including any person, firm or corporation with whom or which any moneys, securities or effects shall be lodged or deposited or for any loss, conversion, misapplication or misappropriation of or any damage resulting from any dealings with any moneys, securities or other assets belonging to the Corporation or for any other loss, damage or misfortune whatever which may happen in the execution of the duties of his respective office of trust or in relation thereto, unless the same shall happen by or through his failure to exercise the powers and to discharge the duties of his office honestly and in good faith with a view to the best interests of the Corporation, and in connection therewith to exercise the care, diligence and skill that a reasonably prudent person would exercise in comparable circumstances, provided that nothing herein contained shall relieve a director or officer from the duty to act in accordance with the Act or regulations made thereunder or relieve him from liability for a breach thereof. The directors for the time being of the Corporation shall not be under any duty or responsibility in respect of any contract, act or transaction whether or not made, done or entered into in the name or on behalf of the Corporation, except such as shall have been submitted to and authorized or approved by the board of directors. If any director or officer of the Corporation shall be employed by or shall perform services for the Corporation otherwise than

as a director or officer or shall be a member of a firm or a shareholder, director or officer of a body corporate which is employed by or performs services for the Corporation, the fact of his being a shareholder, director or officer of the Corporation shall not disentitle such director or officer of such firm or body corporate, as the case may be, from receiving proper remuneration for such services.

3. **Indemnification of directors and officers**

3.01 Subject to the Act, the Corporation shall indemnify a director or officer of the Corporation, a former director or officer of the Corporation or a person who acts or acted at the Corporation's request as a director or officer of a body corporate of which the Corporation is or was a shareholder or creditor, and his heirs and legal representatives, against all costs, charges and expenses, including an amount paid to settle an action or satisfy a judgment, reasonably incurred by him in respect of any civil, criminal or administrative action or proceeding to which he is made a party by reason of being or having been a director or officer of such corporation or body corporate, if

- (a) he acted honestly and in good faith with a view to the best interests of the Corporation; and
- (b) in the case of a criminal or administrative action or proceeding that is enforced by a monetary penalty, he had reasonable grounds for believing that his conduct was lawful.

The Corporation is hereby authorized to execute agreements evidencing its indemnity in favour of the foregoing persons to the full extent permitted by law.

4. **Execution of Documents**

4.01 Contracts, documents or other instruments in writing requiring the signature of the Corporation may be signed by any two directors or officers and all contracts, documents or other instruments in writing so signed shall be binding upon the Corporation without any further authorization or formality. The directors may from time to time determine the officers or other persons by whom any particular document or instrument or class of documents or instruments of the Corporation shall be executed and the manner of execution thereof, including the use of facsimile reproduction of any or all signatures and the use of the corporate seal or facsimile reproduction thereof.

5. **Borrowing**

5.01 The directors may and they are hereby authorized from time to time, without authorization of the shareholders, to:

- (a) borrow money upon the credit of the Corporation;
- (b) issue, reissue, sell or pledge debt obligations of the Corporation;
- (c) subject to the Act, give a guarantee on behalf of the Corporation to secure performance of an obligation of any person; and
- (d) mortgage, hypothecate, pledge or otherwise create a security interest in all or any property of the Corporation, owned or subsequently acquired, to secure any obligation of the Corporation.

5.02 The directors may by resolution delegate any or all of the powers referred to in section 5.01 to a director, a committee of directors or an officer.

5.03 The powers hereby conferred shall be deemed to be in supplement of and not in substitution for any powers to borrow money for the purposes of the Corporation possessed by its directors and officers independently of a borrowing by-law.

6. General

6.01 Financial Year - The financial year of the Corporation shall terminate on the 30th day of September in each year or on such other day in each year as the Board of Directors may from time to time by resolution determine.

6.02 Voting Securities and Other Issuers - All securities of any other body corporate or issuer of securities held from time to time by the Corporation may be voted at all meetings of shareholders, bondholders, debentureholders or holders of such securities, as the case may be, of such other body corporate or issuer and in such manner and by such person or persons as the directors of the Corporation shall from time to time determine.

6.03 Appointment of Officers - The directors shall as often as may be required appoint a President and Secretary and may designate such other offices of the Corporation and appoint such other officers as they may consider advisable. None of such officers need be a director of the Corporation. The officers shall perform such duties as may be specified by the directors. All officers shall be subject to removal by the directors at any time, with or without cause.

7. Effective Date and Repeal

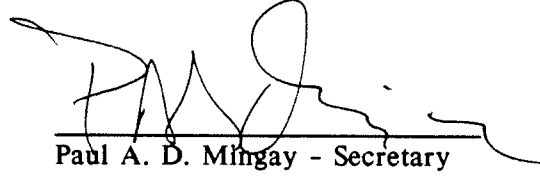
7.01 Effective Date - This By-law shall have effect from December 5, 1991.

7.02 Repeal - All By-laws of the Corporation previously enacted are hereby repealed and replaced by this By-law without prejudice to any action heretofore taken thereunder.

ENACTED this 5th day of December, 1991.



William J. Gastle - President



Paul A. D. Mingay - Secretary