

**A-1.3 (B)**

**CORPORATE BY-LAWS**

**BY-LAW OF PYROGENESIS CANADA INC.  
BY-LAW NO. 1**

**GENERAL BY-LAW**

**ARTICLE 1  
DEFINITIONS AND INTERPRETATION**

**1.1 Definitions**

Where used herein, the following terms shall have the following meaning, unless the context otherwise requires:

- (a) "Act" means the Canada Business Corporations Act, R.C.S., 1985, c. C-44 and its regulations as amended from time to time;
- (b) "Corporation" means the legal person whose name, at the time of the enactment of these by-laws, is Pyrogenesis Canada Inc.;
- (c) "Director" means the director appointed under the Act.

Further, all terms and expressions defined in the Act shall have the same meaning herein.

**1.2 Rules of Interpretation**

Words importing the singular shall include the plural and vice versa, words importing the masculine gender shall include the feminine gender and vice versa and unless the context otherwise requires, words importing individuals shall include legal persons, partnerships and other unincorporated associations.

**1.3 Headings**

The headings used in these by-laws are inserted for convenience of reference only and shall not affect the construction or interpretation hereof.

**ARTICLE 2  
REGISTERED OFFICE**

**2.1 Registered Office**

The registered office of the Corporation shall be situated in the province specified in its articles of incorporation, at the address therein as the directors may from time to time determine.

**2.2 Change of Registered Office**

The Corporation may establish its registered office in another province by amending its articles of incorporation accordingly.

**2.3 Change of Address**

The Corporation may, by resolution of the directors and upon following the formalities prescribed by the Act, change the address of its registered office within the province specified in its articles of incorporation.

#### **2.4 Offices**

The Corporation may establish such other offices, places of business and agencies, elsewhere within or outside Canada, as the directors may from time to time determine.

### **ARTICLE 3 MEETINGS OF SHAREHOLDERS**

#### **3.1 Annual Meetings**

An annual meeting of the shareholders must be called not later than 18 months after the Corporation came into existence and thereafter at such other time as the directors may determine within 15 months from the last preceding annual meeting but no later than six months after the end of the Corporation's preceding financial year, on such day and at such time as the directors may from time to time determine, for the purposes of electing directors, receiving the financial statements of the Corporation, the report of the auditors and any other report and information required by the Act and appointing the auditors and determining their remuneration, as the case may be.

#### **3.2 Special Meetings**

A special meeting of the shareholders may be convened at any time and for any purpose in accordance with the provisions of the Act.

#### **3.3 Place of Meetings**

Meetings of shareholders shall be held at the registered office of the Corporation or at such other place in Canada as the directors may from time to time determine. However, such meetings may be held outside Canada at the place specified in the articles or if all the shareholders entitled to vote at the meeting agree that the meeting is to be held at that place.

A shareholder who attends a meeting of shareholders held outside Canada is deemed to have agreed to the meeting, except when he attends a meeting for the express purpose of objecting to the transaction of any business on the grounds that the meeting is not lawfully held.

#### **3.4 Meetings by means of communication facilities**

The directors or the shareholders who call a meeting of shareholders may determine that the meeting shall be held, in accordance with the Act, entirely by means of a telephonic, electronic or other communication facility that permits all participants to communicate adequately with each other during the meeting.

### **3.5 Notices**

Subject to the provisions of Section 3.2, a notice of the time, place and communication facility to be used, as applicable, and nature of the business to be transacted at all shareholders meetings shall be given to each shareholder entitled to vote at said meeting and whose name is set out in the registers of the Corporation pursuant to the provisions of the Act as well as to each director and to the auditor of the Corporation. This notice shall be sent not less than 21 days nor more than 60 days prior to the date of the meeting. This notice shall be personally served upon, delivered by post by prepaid letter or sent by telecopier or by telegram to each shareholder at the address that appears in the registers of the Corporation. Such notice may also be sent by e-mail to each shareholder having consented thereto, at the e-mail address provided therefor to the Corporation. Notice shall be given by the secretary or by any other officer designated by the directors or by the person or persons convening the meeting. It shall not be necessary that the notice be manually signed.

Notice of a meeting of shareholders at which special business is to be transacted shall state the nature of that business in sufficient detail to permit the shareholders to form a reasoned judgment thereon and shall include the text of any special resolution to be submitted to the meeting. All business transacted at a special meeting of shareholders and all business transacted at an annual meeting of shareholders, except consideration of the financial statements, auditor's report, election of directors and reappointment of the incumbent auditor, is deemed to be special business.

### **3.6 Omission of Notice**

Accidental failure to give notice of any meeting or the non-receipt of any notice by any shareholder or director or auditor shall not invalidate a resolution adopted or any proceedings taken at such meeting.

### **3.7 Incomplete Notice**

Accidental failure in a notice to refer to a matter that the Act or these by-laws require be dealt with at such meeting will not prevent such matter from being validly dealt with at such meeting.

### **3.8 Waiver of Notice**

Any shareholder or any duly nominated proxy of a shareholder and any director and auditor of the Corporation may, prior to or after a meeting, waive notice of, or waive any irregularity committed at or in the notice of, such meeting. The attendance of a shareholder at any meeting, either in person or by proxy, or of any person entitled to take part thereto shall be deemed to be a waiver of the notice of such meeting, except where he attends the meeting for the express purpose of objecting to the transaction of any business on the grounds that the meeting is not lawfully called.

### **3.9 Quorum**

Unless the Act, the articles of incorporation or any other by-law of the Corporation otherwise provides, a person present at the opening of a meeting and representing personally or by proxy one or more shareholders holding 5% of the issued and outstanding voting shares of the Corporation shall constitute a quorum for the transaction of business at any shareholders' meeting. If a quorum is present at the opening of any meeting of shareholders, the shareholders present or represented may proceed with the business of the meeting notwithstanding that a quorum is not present throughout the meeting. If a quorum is not present at the opening of any meeting of shareholders, the shareholders present or represented may adjourn the meeting to a fixed time and place but may not transact any other business other than as provided in these by-laws or in the Act until a quorum is present.

### **3.10 Adjournment**

Whether there is a quorum or not, all meetings of shareholders may be adjourned for less than 30 days by the majority vote of the shareholders present and no notice of such adjournment shall be necessary. Provided there is a quorum, all business that could have been transacted prior to its adjournment meeting may be transacted at such adjournment.

### **3.11 Right to Vote**

Unless the Act or the articles of incorporation of the Corporation otherwise provides, at each meeting of shareholders, every shareholder shall be entitled to one vote for each share held. The registered shareholders entitled to vote at all shareholders' meetings and the number of shares they hold shall be determined in accordance with the shareholders' registers of the Corporation. Shareholders may vote either in person or by proxy. If two or more persons hold shares jointly, one of those holders present at the meeting may in the absence of the others vote the shares, but if two or more of those persons who are present, in person or by proxy, vote, they shall vote as one on the shares jointly held by them.

### **3.12 Proxies**

Any person, whether or not a shareholder of the Corporation, may be appointed and act as proxy. The instrument appointing a proxy shall be in writing and bear the signature of the appointor or his attorney duly authorized in writing; it must be dated and contain the appointment and the name of the proxy with the revocation of any prior instrument appointing a proxy, as the case may be. It shall not be necessary that this instrument be signed before a witness, that the seal be affixed thereto or that it be notarized. It is valid only at the meeting in respect of which it is given or any adjournment thereof. It must be submitted to the secretary or to the transfer agent, if any, at or prior to the meeting or at any other time lawfully determined by the directors.

### **3.13 Attendance by means of communication facility**

Any person entitled to attend a meeting of shareholders may participate in the meeting, in accordance with the Act, by means of a telephonic, electronic or other communication facility that permits all participants to communicate adequately with each other during the meeting, if the

Corporation makes such communication facility available. A person participating in a meeting by such means is deemed to be present at the meeting.

#### **3.14 Chairperson**

Each meeting of shareholders shall be chaired by the chairperson of the board or, in his absence, by the president of the Corporation or, in his absence, by a vice-president or, in their absence, by a shareholder appointed by the shareholders to act as chairperson of the meeting.

#### **3.15 Secretary**

At all shareholders' meetings, the secretary of the Corporation or, in his absence, an assistant-secretary or, in the absence of the secretary and any assistant-secretary, a person designated by the chairperson of the meeting shall act as secretary of the meeting.

#### **3.16 Votes to Govern**

Unless the Act, the articles of incorporation or any other by-law of the Corporation otherwise provides, all questions submitted to a shareholders' meeting shall be decided by a majority of the votes duly cast on the question. Unless otherwise provided by the articles of incorporation of the Corporation, the chairperson presiding a meeting shall not be entitled to a second or casting vote.

#### **3.17 Show of Hands**

Unless the Act, the articles of incorporation or any other by-law of the Corporation otherwise provides, at all meetings of shareholders, all questions shall be decided by a show of hands unless a poll or a vote entirely by means of a communication facility is requested. A proxyholder shall have the right to vote by way of a show of hands except where the proxyholder has conflicting instructions from more than one shareholder.

A declaration by the chairperson of the meeting that a resolution has been carried or ratified unanimously or carried by a specific majority or not carried and an entry to that effect in the minutes of the proceedings of the meeting shall be conclusive evidence of the fact without proof of the number or proportion of the votes recorded in favour of or against such resolution.

#### **3.18 Ballot**

At all meetings of the shareholders, any shareholder or proxyholder entitled to vote at such meeting may demand a ballot either before or after any vote by show of hands.

Where a ballot is demanded, the chairperson of the meeting may appoint one or more persons, who may not be shareholders of the Corporation, to act as scrutineer, failing which the secretary of the Corporation shall act as scrutineer.

Each shareholder or proxyholder shall remit to the scrutineer a ballot indicating his name, the name or names of the shareholders he represents, if applicable, the number of votes he holds and the manner in which he intends to cast his vote.

#### **3.19 Vote by communication facility**

At all meetings of the shareholders, the vote may be held, in accordance with the Act, entirely by means of telephonic, electronic or other communication facility provided by the Corporation if the communication facility enables the votes to be gathered in a manner that permits their subsequent verification and permits the tallied votes to be presented to the Corporation without it being possible for the Corporation to identify how each shareholder or group of shareholders voted.

Further, any person participating in a meeting of the shareholders held pursuant to Section 3.4 or 3.13 may, in accordance with the Act, vote by means of a telephonic, electronic or other communication facility provided by the Corporation for that purpose. Where a ballot is held such person shall vote in the manner decided by the chairperson of the meeting.

### **ARTICLE 4 DIRECTORS**

#### **4.1 Number**

The affairs of the Corporation shall be managed by a board of directors composed of the number of directors specified in the articles of incorporation of the Corporation, and if a minimum and a maximum number of directors is provided for therein, the board of directors shall be composed of the number of directors that the directors may from time to time, by resolution, determine. Subject to the provisions of the Act, at least 25 % of the directors of a Corporation must be resident Canadians. However, if the Corporation has less than four directors, at least one of them shall be a resident Canadian.

#### **4.2 Qualification**

In order to be elected or appointed to act as a director, a person must meet the requirements set out by the Act, the articles of incorporation and any other by-law of the Corporation. A director shall not be required to hold a share of the Corporation.

#### **4.3 Consent to hold office**

The election or appointment of a person to hold office as a director is not a director and is deemed not to have been elected or appointed as a director unless he or she was present at the meeting when the election or appointment took place and he or she did not refuse to hold office as a director, if he or she was not present at the meeting when the election or appointment took place, he or she consented to hold office as a director in writing before the election or appointment or within 10 days after it, or he or she has acted as a director pursuant to the election or appointment.

#### **4.4 Election and Term**

Unless otherwise provided for by the Act, the articles of incorporation or any other by-law of the Corporation, the directors shall be elected by the shareholders at a shareholders' meeting. The election of the directors shall take place at each annual shareholders' meeting of the Corporation and all the directors then in office shall be deemed to have retired but they shall be eligible for re-election if qualified. If, at any time, an election of directors is not held or is not held at the annual meeting, it shall take place at the following general meeting of shareholders duly called for this purpose and the previously elected directors shall continue in office until their successors are elected.

#### **4.5 Vacancies**

So long as the remaining directors constitute a quorum, they may act even though there is a vacancy on the board of directors; they may also elect a new director to fill a vacancy, save for a vacancy resulting from an increase in the number or the minimum number of directors or the failure to elect the number or minimum number of directors required by the articles of incorporation. All shareholders entitled to vote may also elect directors in case of vacancies. If, due to vacancies, the number of remaining directors is less than the required quorum, a special shareholders' meeting must be convened to fill such vacancies.

#### **4.6 Remuneration**

Unless otherwise provided for by the Act, the articles of incorporation, any other by-law of the Corporation or any unanimous shareholder agreement, the remuneration to be paid to the directors shall be such as the directors shall from time to time determine and they shall also determine the remuneration or compensation to be paid to all officers, employees or agents of the Corporation whether or not they are directors. The directors shall also be reimbursed for their travelling and other expenses properly incurred by them in connection with the affairs of the Corporation including their expenses to attend the meetings of the directors.

#### **4.7 Disqualification**

The office of a director shall be vacated:

- (a) if the director ceases to be qualified;
- (b) if the director is prohibited to act as director by a competent authority;
- (c) if the director becomes bankrupt or insolvent or enters into an arrangement with his creditors;
- (d) if the director dies, resigns or is removed in the manner set out below.

#### **4.8 Resignation**

Any director may, at all times, resign his office by written notice delivered to the president or the secretary or at a directors' or shareholders' meeting. A director's resignation shall take effect as of



the date of the forwarding of his written resignation to the Corporation or at such later date specified therein.

#### **4.9 Removal**

The holders of a majority of the voting shares of the Corporation may, at any time at a special meeting of the shareholders duly called for this purpose, remove with or without cause one or more of the directors of the Corporation.

If the holders of a particular class of shares have the exclusive right to elect a director, such director may only be removed at a special meeting of these holders convened for this purpose in the same manner as a special meeting of shareholders of the Corporation.

The vacancy may be filled at the same meeting that gave rise to the removal provided that the notice calling the meeting state that such an election will be held or, in the absence of such statement, in the notice pursuant to Section 3.5.

#### **4.10 Liability of Directors**

A director of the Corporation is not liable for the losses or damages sustained by the Corporation during his term of office if he exercised the care, diligence and skill that a reasonably prudent person would have exercised in comparable circumstances, including reliance in good faith on financial statements of the Corporation represented by an officer of the Corporation or a written report of the auditor to fairly reflect the financial condition of the Corporation, or on a report of a person whose profession lends credibility to a statement made by the professional person.

#### **4.11 General Powers of the Directors**

Subject to the provisions of the Act, the articles of incorporation and the by-laws of the Corporation, the directors shall have authority to do all things that are necessary for the administration, supervision and management of the business and affairs of the Corporation that are not illegal or contrary to the Act and these by-laws.

#### **4.12 Disclosure of Interests**

Any director shall, within the time prescribed by the Act, disclose in writing to the Corporation or request to have entered in the minutes of meetings of directors the nature and extent of his or her interest where he or she is a party to a material contract or material transaction, whether made or proposed, with the Corporation or where he or she is a director or an officer of a party to the contract or transaction with the Corporation or he or she has material interest in a party to the contract or transaction. Any material change in the interest of a director shall be disclosed to the Corporation in the same manner.

A general notice to the directors declaring that a director is a director or officer of a party to, that he acts in a similar capacity or that he has a material interest in a party to, the contract or

transaction and that he is to be regarded as interested in any contract or transaction made with such party is a sufficient declaration of interest.

Except as otherwise provided in the Act, the director who is interested shall abstain from voting on the resolution to approve any such contract or transaction.

The shareholders of the Corporation may examine the portions of any minutes of meetings of directors or of committees of directors and any other documents that contain any disclosure of interest of a director in a contract or transaction during the usual business hours of the Corporation.

#### **4.13 Indemnification of Directors**

The Corporation shall indemnify a director, a former director and any other individual who acts or acted at the Corporation's request as a director of another entity as well as their respective heirs and successors, against all costs, charges and expenses authorized by the Act and incurred by the director, former director or individual in respect of an inquiry or a civil, criminal or administrative action or proceeding in which the director, former director or individual is involved by reason of that association with the Corporation or that other entity, except in respect of an action by or on behalf of the Corporation or the other entity to procure a judgment in its favour, if the individual acted honestly and in good faith with a view to the best interests of the Corporation or the other entity, or in the case of a criminal or administrative action or proceeding that is enforced by a monetary penalty, he had reasonable grounds to believe that his conduct was lawful.

The Corporation may advance moneys to any individual referred to in the preceding paragraph for the costs, charges and expenses of any proceeding referred to in the said paragraph and such individual shall repay the moneys in the circumstances provided for in the Act.

In respect of an action by or on behalf of the Corporation or the other entity to procure a judgment in its favour, the Corporation shall with the approval of a court advance the moneys referred to in the preceding paragraph or indemnify an individual referred to in the first paragraph hereof against all costs, charges and expenses incurred by such individual in respect of any such action to which the individual was made a party because of his or her association with the Corporation or the other entity, if he acted honestly and in good faith with a view to the best interests of the Corporation or the other entity or, in the case of a criminal or administrative action or proceeding that is enforced by a monetary penalty, he had reasonable grounds to believe that his conduct was lawful.

The Corporation may purchase and maintain insurance for the benefit of the above-mentioned individuals against any liability incurred by them in their capacity as director, officer or similar capacity of another entity if the individual acts or acted in that capacity at the Corporation's request.

## **ARTICLE 5 MEETINGS OF DIRECTORS**

### **5.1 Regular Meetings**

The directors may, without notice, hold a meeting to elect or appoint the officers of the Corporation and transact such other business as may be deemed appropriate either immediately after the annual shareholders' meeting and at the same place it was held, or immediately after a special meeting of the shareholders at which an election of directors took place at the same place it was held. The directors may also, without any notice being required, hold regular meetings at the dates and places they shall have predetermined by resolution.

### **5.2 Special Meetings**

The directors may hold special meetings at all times and anywhere in Canada for any and all purposes either when called for by the president or a vice-president or two directors, provided that a notice be given to each director, or without such notice if all of the directors are present or have waived notice of such meeting in writing.

### **5.3 Notice of Meetings**

A notice of a meeting of the directors shall be considered duly served upon a director when such notice specifies the time, place where the meeting is to be held and the communication facility to be used, if applicable, has been forwarded by letter at least 48 hours or by telegram or by telecopier at least 24 hours prior to such meeting, addressed to his last business address or his last known residence or, if such notice is given to him personally, either by telephone or by serving same to him at least 24 hours prior to the meeting.

A notice of a meeting of the directors may also be sent by e-mail 24 hours prior to the meeting to each director having consented thereto at the e-mail address provided therefor to the Corporation. The notice shall be given by the secretary or by any other officer designated by the president or directors. The notice need not specify the business to be transacted at the meeting, except where the purpose of the meeting is to:

- (a) submit any question or matter requiring the approval of the shareholders;
- (b) fill a vacancy among the directors or in the office of auditor;
- (c) issue securities;
- (d) declare dividends;
- (e) purchase, redeem or otherwise acquire shares issued by the Corporation;
- (f) pay a commission for the purchase of shares of the Corporation;
- (g) approve a management proxy circular;
- (h) approve a take-over bid circular or any related directors' circular;
- (i) approve the annual financial statements;
- (j) adopt, amend or repeal by-laws.

#### **5.4 Quorum**

A majority of the members of the board of directors shall constitute the quorum required for the transaction of business at any meeting of directors. Except as otherwise provided under the Act, at least 25 % of directors present shall be resident Canadians. A quorum shall be maintained throughout the meeting.

#### **5.5 Adjournment**

Whether there is a quorum or not, all directors' meetings may be adjourned by the vote of the majority of the directors present and no notice of such adjournment shall be required if the time and place of the adjourned meeting has been announced at the original meeting.

#### **5.6 Votes**

All questions submitted to a meeting of the directors shall be decided by a majority vote, each director present being entitled to cast one vote. All questions shall be decided by a show of hands unless a ballot is requested. Unless otherwise provided by the articles of incorporation of the Corporation, the chairperson presiding the meeting shall not be entitled to a second or casting vote.

Where a ballot is requested, the chairperson of the meeting may appoint one or more persons to act as scrutineer, failing which the secretary of the meeting shall act as scrutineer. Each director shall remit to the scrutineer a ballot indicating the manner in which he intends to cast his vote.

Where a ballot is held, any director participating in the meeting by means of a communication facility pursuant to Section 5.11 shall cast his or her vote in the manner provided by the chairperson of the meeting.

Unless a ballot is demanded, an entry in the minutes of a meeting to the effect that the chairperson of the meeting declared a resolution to be carried or defeated is, in the absence of evidence to the contrary, proof of the fact without proof of the number or proportion of the votes recorded in favour of or against the resolution.

#### **5.7 Dissent**

A director who is present at a meeting of directors is deemed to have approved any resolution passed or action taken thereat, unless he requests that his dissent be or his dissent is entered in the minutes of the meeting, he sends his written dissent to the secretary of the meeting before the meeting is adjourned or he sends his dissent by registered mail to the registered office of the Corporation immediately after the meeting is adjourned. A director who votes for or consents to a resolution is not entitled to dissent.

A director who was not present at a meeting at which a resolution was passed or action taken is deemed to have consented thereto unless within seven days after he becomes aware of the

resolution he causes his dissent to be placed with the minutes of the meeting or he sends his dissent by registered mail or delivers it to the registered office of the Corporation.

#### **5.8 Chairperson**

Each meeting of the directors shall be chaired by the chairperson of the board of directors of the Corporation if a person has been so nominated or, in his absence, by a director (who shall not be an employee of the Corporation) chosen by the other directors.

#### **5.9 Secretary**

At any meeting of directors, the secretary of the Corporation or, in his absence, an assistant-secretary or, in the absence of the said officers, a person appointed by the chairperson of the meeting, shall act as secretary.

#### **5.10 Waiver of Notice**

Any director may waive notice of a meeting of the board of directors either prior to or after such meeting, by signing a written statement to such effect and handing same to the secretary of the meeting. The presence of a director at a meeting shall be considered as a waiver of notice of such meeting, except where he attends a meeting for the express purpose of objecting to the holding of the meeting because the calling of the meeting was irregular.

#### **5.11 Participation by communication facility**

A director may, in accordance with the Act, if all the directors consent, participate in a meeting of directors or committee of directors by means of a telephonic, electronic or other communication facility that permits all participants to communicate adequately with each other during the meeting. A director participating in such a meeting by such means shall be deemed to be present at that meeting.

#### **5.12 Resolution in Lieu of Meeting**

A written resolution signed by all the directors entitled to vote thereon at a meeting of directors or committee of directors is as valid as if it had been passed at such a meeting. A copy of every such resolution shall be kept with the minutes of the proceedings of the directors or committee of directors.

#### **5.13 Committees of Directors**

The board of directors may by resolution, appoint from amongst its members one or several committees of directors and delegate to such committees one or any of the powers it holds, save those that may not be delegated under the Act.

#### **5.14 Validity of Acts of Directors**

All acts of the board of directors or of any director acting in his capacity as director or of any person acting as a director when not qualified to so act shall be as valid as if each and every of the aforesaid persons had been duly appointed or elected or were qualified as a director.

## **ARTICLE 6 OFFICERS AND AGENTS**

### **6.1 Officers**

The officers of the Corporation shall be a president of the Corporation and a secretary and may also include one or more vice-presidents if any are elected or appointed by the directors. The directors may also elect or appoint a chairperson of the board, a treasurer, one or more assistant-secretaries and assistant-treasurers and such other officers as they may deem appropriate.

### **6.2 Qualification**

None of the officers, including the president and any vice-president, need be a member of the board of directors. The same person may simultaneously hold two or more offices.

### **6.3 Term of Office**

Save as otherwise provided for by the directors at the time of their election or appointment, the officers shall hold their offices from that date until the first meeting of the directors following the next annual shareholders' meeting or until their successors are elected or appointed.

### **6.4 Resignation and Removal of Officers**

Any officer may resign at any time by submitting his written resignation to the president or to the secretary or to a meeting of the directors. An officer's resignation shall take effect as of the date of the forwarding of his written resignation or at such later date specified therein. An officer may be removed at any time, with or without cause, by resolution of the majority of the directors then in office.

### **6.5 Vacancies**

All vacancies occurring amongst the officers may be filled by the directors.

### **6.6 Powers and Duties of Officers**

Save as otherwise provided for by the Act or by the by-laws of the Corporation, each officer shall execute the duties and exercise the powers usually attached to his office and shall execute all duties and exercise all powers that shall or may be delegated to him by the directors.

### **6.7 Chairperson of the Board**

Should a chairperson of the board be elected, he shall preside at all meetings of the board of directors and all meetings of shareholders and shall perform all duties requested by such board.

#### **6.8 President**

Save as otherwise provided for by the directors, the president shall be the chief executive officer of the Corporation and, subject to the control of the board of directors, he shall be responsible for the administration of all the business of the Corporation.

#### **6.9 Vice-Presidents**

In the absence of the president or in case of his inability to act, a vice-president shall perform all duties of the president.

#### **6.10 Secretary**

The secretary shall attend all shareholders and board of directors meetings and shall record the minutes of such meetings in the appropriate books of the Corporation. He shall give notice of all the meetings as required by the Act and these by-laws. He shall be the custodian of the seal and of all the books, registers, documents and archives of the Corporation. Also, he shall perform all other functions or duties as the directors may direct. He shall report and be accountable to the board of directors.

The secretary shall ex-officio be an assistant-treasurer.

#### **6.11 Treasurer**

The treasurer shall receive all moneys paid to the Corporation and shall deposit same in the name of or to the credit of the Corporation in a bank or banks or with a depositor chosen by the directors. He shall keep full and accurate books of accounts in which shall be recorded all receipts and disbursements of the Corporation and all transactions affecting the financial situation of the Corporation and he shall, upon request, provide any director of the Corporation with such books and accounts at the Corporation's offices, during normal working hours. He shall also perform all other duties as the directors may direct. He shall report and be accountable to the board of directors.

The treasurer shall ex-officio be an assistant-secretary.

#### **6.12 Assistant-Secretaries**

The assistant-secretary or secretaries shall perform all duties and exercise all powers that the directors or the secretary may direct from time to time and shall be accountable and report to the secretary. In the absence of the secretary, one or the other of the assistant-secretaries shall give notice of the meetings of the shareholders and of the directors and shall act as secretary of such meetings.

### **6.13 Assistant-Treasurers**

The assistant-treasurer or treasurers shall perform all duties and exercise all powers that the directors or the treasurer may from time to time direct and shall report and be accountable to the treasurer.

### **6.14 Manager**

The directors may by resolution appoint a manager of the Corporation and, from time to time, may determine his remuneration and outline his duties and powers.

### **6.15 Agents**

The directors may by resolution appoint agents of the Corporation for specific purposes, subject to whatever conditions they may deem appropriate. Any agent of the Corporation may be authorized by the directors to delegate all or part of the powers delegated to him. Save if otherwise decided upon by the directors, the president or a vice-president and the secretary or an assistant-secretary shall have the power for and on behalf of the Corporation to sign a proxy and to give same to an agent appointed by resolution of the directors. The seal of the Corporation may, when requested, be affixed to such proxy by the officer or the officers or the person or persons signing such proxy for and on behalf of the Corporation.

### **6.16 Liability of Officers and Agents**

An officer or agent of the Corporation is not liable for the losses or damages sustained by the Corporation during his term of office if the officer or agent exercised the care, diligence and skill that a reasonably prudent person would have exercised in comparable circumstances, including reliance in good faith on financial statements of the Corporation represented by an officer of the Corporation or a written report of the auditor to fairly reflect the financial condition of the Corporation, or on a report of a person whose profession lends credibility to a statement made by the professional person.

### **6.17 Disclosure of Interests**

Any officer shall, within the time prescribed by the Act, disclose in writing to the Corporation or request to have entered in the minutes of meetings of directors the nature and extent of his or her interest where he or she is a party to a material contract or a material transaction, whether made or proposed, with the Corporation or where he or she is a director or an officer of a party to the contract or transaction with the Corporation or he or she has material interest in a party to the contract or transaction. Any material change in the interest of a director shall be disclosed to the Corporation in the same manner.

A general notice to the directors declaring that an officer is a director or officer of a party to, that he acts in a similar capacity or that he has a material interest in the party to, the contract or transaction and that he is to be regarded as interested in any contract or transaction made with such party is a sufficient declaration of interest.



The shareholders of the Corporation may examine the portions of any minutes of meetings of directors or of committees of directors and any other documents that contained any disclosure of interest of an officer in a contract or a transaction during the usual business hours of the Corporation.

#### **6.18 Indemnification of Officers and Agents**

The Corporation shall indemnify an officer, a former officer and any other individual who acts or acted at the Corporation's request as a director of another entity as well as their respective heirs and successors, against all costs, charges and expenses authorized by the Act and incurred by the officer, former officer or individual in respect of an inquiry or a civil, criminal or administrative action or proceeding in which the officer, former officer or individual is involved by reason of that association with the Corporation or that other entity, except in respect of an action by or on behalf of the Corporation or the other entity to procure a judgment in its favour, if the individual acted honestly and in good faith with a view to the best interests of the Corporation or the other entity, or in the case of a criminal or administrative action or proceeding that is enforced by a monetary penalty, he had reasonable grounds to believe that his conduct was lawful.

The Corporation may advance moneys to any individual referred to in the preceding paragraph for the costs, charges and expenses of any proceeding referred to in the said paragraph and such individual shall repay the moneys in the circumstances provided for in the Act.

In respect of an action by or on behalf of the Corporation or the other entity to procure a judgment in its favour, the Corporation shall with the approval of a court advance the moneys referred to the preceding paragraph or indemnify an individual referred to in the first paragraph hereof against all costs, charges and expenses incurred by such individual in respect of any such action to which the individual was made a party because of his or her association with the Corporation or the other entity, if he acted honestly and in good faith with a view to the best interests of the Corporation or the other entity or, in the case of a criminal or administrative action or proceeding that is enforced by a monetary penalty, he had reasonable grounds to believe that his conduct was lawful.

The Corporation may purchase and maintain insurance for the benefit of the above-mentioned individuals against any liability incurred by them in their capacity as director, officer or similar capacity of another entity if the individual acts or acted in that capacity at the Corporation's request.

### **ARTICLE 7 SEAL**

#### **7.1 Description**

Should the Corporation have a seal, it shall contain the name of the Corporation within two concentric circles.

**ARTICLE 8**  
**SHARE CAPITAL, REGISTERS, SHARE CERTIFICATES AND SHARE TRANSFERS**

**8.1 Allotment of Shares**

Shares of the Corporation may be allotted from time to time by resolution of the directors on such terms and conditions and to such persons or classes of persons as the directors may determine.

However, a share shall not be issued until the consideration for the share is fully paid in money or in property or past services that are not less in value than the fair equivalent of the money that the Corporation would have received if the share had been issued for money.

**8.2 Books and Registers**

The Corporation shall cause one or many books or registers to be kept at its registered office or at any other place in Canada designated by the directors in accordance with the Act, in which shall be recorded:

- (a) the articles of incorporation of the Corporation, the by-laws and their amendments and a copy of any unanimous shareholder agreement or shareholder declaration, if applicable;
- (b) the minutes of proceedings of meetings and resolutions of shareholders;
- (c) the minutes of proceedings of meetings and resolutions of the directors and of their committees;
- (d) the names in alphabetical order of all persons who hold or have held shares;
- (e) the number of shares held by those persons;
- (f) the date and details of the issue and transfer of each share;
- (g) the surname, given name and address of each of its directors with an indication for each term of office, of the date on which it begins and the date on which it ends;
- (h) copies of all notices of directors and notices of change of directors sent to the Director.

**8.3 Transfer Agent and Registrar**

The directors may by resolution appoint, on such terms as they may deem appropriate, one or more transfer agents who shall keep branch securities registers in Canada or at such other place or places as the directors may determine.

**8.4 Form of Share Certificates**

Each share certificate shall state on its face, in legible written or printed characters, the name of the Corporation, the words "Incorporated under the Canada Business Corporations Act", the name of the person to whom it was issued and the number and class of shares that it represents. The seal of the Corporation need not be affixed on such certificate.

The complete text of the rights, privileges, conditions and restrictions attached to the issued shares shall be part of every certificate unless it contains a statement that a full copy of the text will be furnished to a shareholder on demand and without charge.

The forms of the share certificates shall be approved by the directors. Share certificates shall be issued in numerical order and a statement and receipt of each certificate shall be signed by or on behalf of the person to whom it is issued.

#### **8.5 Signature and Delivery of Share Certificates**

Each certificate shall be signed by the president or a vice-president and countersigned by the secretary or an assistant-secretary. Any such signature may be mechanically reproduced on the certificate. However, if a transfer agent has been appointed, the above signatures may be mechanically reproduced and the certificate shall be countersigned by the transfer agent.

Each shareholder shall be entitled to receive, without charge, one share certificate under the seal of the Corporation, if applicable, or a non-transferable written acknowledgement of his right to obtain such share certificate. The Corporation shall not be bound to issue more share certificates than if such shares were held by a single shareholder.

#### **8.6 Lost, Stolen or Destroyed Certificates**

Subject to the provisions of the Act, the directors may issue a new share certificate in lieu of and upon cancellation of a share certificate that has been lost, stolen or destroyed, on such terms as they shall deem appropriate in each case.

#### **8.7 Transfers**

Subject to the provisions of the Act or any by-law of the Corporation, no transfer of shares shall be entered in the share register of the Corporation except upon presentation of the certificate representing such share with an endorsement in compliance with the Act signed by an appropriate person as provided by the Act, together with such reasonable assurance that the endorsement is genuine and effective as the directors may from time to time prescribe, upon payment of all applicable taxes and any fees prescribed by the directors in accordance with the Act and upon compliance with such restrictions on transfers as may be authorized by the articles of incorporation or any other by-law of the Corporation.

### **ARTICLE 9 FISCAL YEAR AND DIVIDENDS**

#### **9.1 Fiscal Year**

The fiscal year of the Corporation shall end on the date determined by resolution of the directors of the Corporation, subject to applicable laws.

#### **9.2 Dividends**

Subject to the provisions of the articles of incorporation of the Corporation, the directors may, at their complete discretion, declare dividends from time to time out of the funds of the Corporation

available for that purpose and all such dividends so declared shall be payable at the times specified by the directors. The shareholders entitled to receive payment of a dividend are determined in accordance with the Corporation's registers as at the date the resolution to declare the dividend is passed or as at such other date as the directors may lawfully determine. A notice of declaration of dividends shall be given to each shareholder entitled to such dividends and such notice shall specify the time and place of payment. The dividend check forwarded by the Corporation or its agent responsible for the payment of same shall however constitute appropriate notice.

## **ARTICLE 10 NEGOTIABLE INSTRUMENTS, CONTRACTS, VOTING SHARES, JUDICIAL DECLARATIONS**

### **10.1 Checks, Drafts, Notes, etc.**

All checks, drafts or orders for the payment of money and all notes and acceptances and bills of exchange shall be signed by such officers or other persons, whether or not officers of the Corporation, and in such manner as the directors may from time to time determine by resolution. Unless otherwise provided for by a resolution of the directors, all endorsements of such cheques, drafts, notes, orders, acceptances and bills of exchange payable to the Corporation shall be "for collection" or "for deposit" with the bankers of the Corporation and the Corporation's rubber stamp may be used for such purpose.

### **10.2 Contracts, Documents and Instruments in Writing**

Contracts, documents or instruments in writing (except contracts made in the ordinary course of business by the Corporation) requiring the signature of the Corporation may be validly signed by (i) the president or (ii) a vice-president together with the secretary, provided that such offices are not held by the same individual, and all contracts, documents or instruments in writing so signed shall be binding upon the Corporation without any further authorization or formality. The directors may from time to time by resolution appoint any officer or any person on behalf of the Corporation either to sign contracts, documents or instruments in writing generally or to sign specific contracts, documents or instruments in writing. The corporate seal of the Corporation may, when required, be affixed to contracts, documents or instruments in writing signed as aforesaid or by any person appointed as aforesaid by resolution of the directors.

### **10.3 Voting Rights in Other Corporations**

Unless otherwise provided by the directors, the president of the Corporation is hereby granted the power and the authority required for the purpose of representing the Corporation and more particularly, for the purpose of voting either personally or by proxy, at all meetings of any other legal person in which the Corporation holds shares and the president shall have the right, at all such meetings, to exercise all powers and all rights pertaining to such shares as if he were the holder. Any other officer may, by resolution of the directors, be granted the same power and authority.

#### 10.4 Judicial Declarations

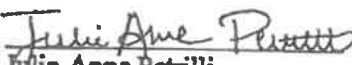
The president, any vice-president, the secretary, the treasurer or any director are hereby authorized and empowered to declare for and on behalf of the Corporation any answer to writs of seizure by garnishment, issued prior to or subsequent to judgment, to appear and answer for the Corporation to all interrogatories upon all articulated facts issued out of any court and, to any other proceedings that may be required in a suit concerning the Corporation and to consent to any proxy relating to such procedures.

The directors may, however, appoint any other person as representative of the Corporation for these purposes.

Adopted by the directors on July 11th, 2012

Confirmed by the directors on ~~February~~<sup>14</sup> 24<sup>th</sup> 2012

  
Alan Curleigh  
Chair

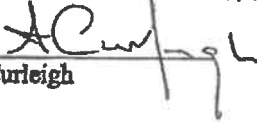
  
Julie-Anne Petrilli  
Corporate Secretary

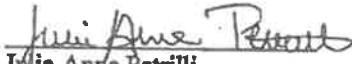
**PYROGENESIS CANADA INC.**  
**BY-LAW NO.2**  
**GENERAL BORROWING BY-LAW**

Without restricting the application of the Canada Business Corporation Act, the directors may, when they deem it expedient and without the authorization of the shareholders:

- a) Borrow money upon the credit of the corporation;
- b) Issue, reissue, sell, pledge or hypothecate debt obligations of the corporation;
- c) 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.

Adopted by the directors on February 24, 2012

  
Alan Curleigh  
Chair

  
Julie-Anne Petrilli  
Corporate Secretary