

COMPENSATION COMMITTEE CHARTER
APTOSE BIOSCIENCES INC.
(the “Company”)

As revised and adopted by the Board of Directors (the “Board”) on November 30, 2018

1. Purpose

The primary purposes of the Compensation Committee (the “Committee”) of the Board are to (a) make recommendations to the Board regarding corporate goals and objectives relevant to the compensation of the Company’s CEO and other senior executive officers of the Company (the “Senior Officers”), evaluate the performance of the CEO and other Senior Officers in light of those goals and objectives and make recommendations to the Board with respect to the compensation level of the CEO and other Senior Officers; (b) make recommendations to the Board with respect to the grant of options under the Company’s Share Option Plan, as amended from time to time or other grants under equity-based plans; (c) recommend to the Board the cash and non-cash compensation policies for the non-employee directors; (d) make recommendations to the Board with respect to amendments to the Company’s Share Option Plan or other equity-based plans or implementing other equity-based plans; (e) assist the Board in evaluating potential candidates for Senior Officer positions with the Company; (f) review, discuss with management and approve the Company’s disclosures regarding compensation for use in any of the Company’s public disclosure documents, including annual reports, including on Form 10-K, Form 20-F or Form 40-F, as applicable, as and to the extent required by the U.S. Securities and Exchange Commission (the “SEC”), annual information forms, registration statements, information circulars, proxy statements or similar information statements and otherwise as required under Canadian or United States securities laws and prepare and review the statement of executive compensation included the Company’s information circular and proxy statement with respect to its annual meeting in accordance with applicable securities laws, rules and regulations in effect from time to time; and (g) produce a compensation committee report on executive officer compensation as required by applicable securities laws.

2. Composition

(a) At Least Two Members. The Committee shall consist of a minimum of two unrelated or independent directors as defined in Section 2(b) below. The Board shall designate a Committee member as the Chair of the Committee on an annual basis, or if the Board does not do so, the Committee members shall appoint a Committee member as Chair by a majority vote of the authorized number of Committee members.

(b) Independence. All members of the Committee shall be “unrelated” or “independent” as determined by the Board, applicable securities laws, the rules and regulations of the applicable securities regulatory authority and stock exchanges and any other laws applicable to the Company, including “independent” within the meaning of National Instrument 58-101 Disclosure of Corporate Governance Practices and Nasdaq Listing Rule 5605(a)(2), subject to any exceptions permitted by such requirements. In addition, in affirmatively determining the independence of any director who will serve on the Committee, the Board must consider all factors specifically relevant to determining whether a director has a relationship to the Company that is material to that director's ability to be independent from management in connection with the duties of a Committee member, including, but not limited to: (i) the source of compensation of such director, including any consulting, advisory or other compensatory fee

paid by the Company to such director; and (ii) whether such director is affiliated with the Company, a subsidiary of the Company or an affiliate of a subsidiary of the Company.

In addition, all Committee members shall satisfy the “non-employee director” standard within the meaning of Rule 16b-3 promulgated under the United States Securities Exchange Act of 1934, as amended from time to time (the “Exchange Act”), and the “outside director” standard within the meaning of Section 162(m) of the United States Internal Revenue Code of 1986, as amended from the time to time.

(c) **Appointment and Removal.** Committee members shall be appointed by the Board. Members of the Committee shall serve until their resignation or removal. The Board may fill vacancies on the Committee by a majority vote of the authorized numbers of Directors, but may remove Committee members only with the approval of a majority of the independent Directors then serving on the full Board.

3. Meetings, Reports and Resources of the Committee

(a) **Meetings.** In discharging its responsibilities, the Committee shall meet as often as it determines necessary or advisable, but not less frequently than annually. The Committee may also hold special meetings or act by unanimous written consent as the Committee may decide. The meetings may be in person or telephone. The Committee shall appoint a secretary to be the secretary of each meeting of the Committee to keep written minutes of the meeting and deliberations and will ensure that such minutes are included in the Company’s minute book. The Chair of the Committee shall report at the next regularly scheduled Board meeting following the applicable Committee meeting.

(b) **Procedures.** The Committee may establish its own procedures, including the formation and delegation to subcommittees, in a manner not inconsistent with this charter, the articles or applicable laws or regulations. The Chair or a majority of the Committee members may call meetings of the Committee. A majority of the members of the Committee shall constitute a quorum for the transaction of Committee business, and the vote of a majority of the Committee members present at the meeting at which a quorum is present shall be the act of the Committee. The Committee shall review, discuss and assess its own performance at least annually. The Committee shall also periodically review and assess the adequacy of this charter, including the Committee’s role and responsibilities as outlined in this charter, and shall periodically, but at least annually, report to the Board on its proceedings, reviews undertaken and any associated recommendations for its consideration.

(c) **Reports.**

(i) The Committee shall prepare and review, at an appropriate time prior to preparation of the Company’s information circular for its annual meeting, a statement of executive compensation which shall be recommended to the Board for inclusion in such information circular. The statement of executive compensation shall include the disclosure required under all applicable laws and stock exchange rules, including a discussion of the Committee’s compensation policies applicable to the Company’s named executive officers and Board. The Committee shall also report to the Board on the major items covered by the Committee as it may determine to be appropriate. The Committee shall review and discuss with management the Company’s compensation disclosures to be included in the information circular, and any other disclosure document required by applicable law.

(ii) The Committee shall prepare and review the Committee report on executive compensation to be included in the Company's annual proxy statement in accordance with applicable SEC rules and regulations and shall review and discuss with management the Company's compensation disclosures for use in any of the Company's annual reports on Form 10-K, Form 20-F or Form 40-F, as applicable, registration statements, proxy statements or information statements and make recommendations to the Board that such disclosures be approved for inclusion in the Company's annual reports on Form 10-K, Form 20-F or Form 40-F, as applicable.

(d) Resources. The Committee is at all times authorized to have direct, independent and confidential access to the Company's other directors, management and personnel to carry out the Committee's purposes. The Committee shall have the sole authority to retain and terminate at the Company's expense any compensation-consulting firm used to evaluate executive officer or director compensation, and to approve the consulting firm's fees and other retention terms. The Committee is also authorized to retain and terminate at the Company's expense, independent counsel or other advisers selected by the Committee for matters related to the Committee's purposes.

(e) Compensation Consultants, Legal Counsel and Other Advisors. The Committee may select a compensation consultant, legal counsel (other than in-house legal counsel) or other adviser to the Committee, and may receive advice therefrom, only after considering the factors set forth in Rule 10C-1(b)(4) under the Exchange Act, as well as any other factors identified by applicable listing standards.

4. Responsibility

In furtherance of its purpose, the Committee shall have the following responsibilities, with the understanding, however, that the Committee may supplement and, except as otherwise required by applicable law or the requirements of applicable stock exchanges, conduct activities not specifically described herein but instrumental in achieving its responsibilities under the circumstances:

(a) Compensation Goals. To make recommendations to the Board with respect to the overall corporate policies, goals and objectives for the compensation of the Company's CEO and Senior Officers, including:

- reviewing and making recommendations to the full Board regarding corporate performance goals and objectives, which shall support and reinforce the Company's long-term strategic goals, relevant to the compensation of the Company's executive officers;
- evaluating and approving (or, if it deems appropriate, making recommendations to the full Board regarding) the compensation plans and programs advisable for the Company, as well as the modification or termination of existing plans and programs;
- establishing policies with respect to equity compensation arrangements, with the objective of appropriately balancing the perceived value of equity compensation and the dilutive and other costs of that compensation to the Company;
- establishing policies for allocating between long-term and currently paid-out compensation, between cash and non-cash compensation and the factors used in deciding between the various forms of compensation;

- establishing elements of corporate performance for purposes of increasing or decreasing compensation;
- establishing policies on the timing and pricing of equity awards for newly hired employees, promotions and annual grants for executives and non-executive employees and directors;
- reviewing regional and industry-wide compensation practices and trends to assess the propriety, adequacy and competitiveness of the Company's executive compensation programs among comparable companies in the Company's industry; however, the Committee shall exercise independent judgment in determining the appropriate levels and types of compensation to be paid;
- establishing and periodically assessing the adequacy of director compensation;
- reviewing and making recommendations to the full Board regarding any compensation arrangement for any executive officer involving any subsidiary, special purpose or similar entity, taking into account the potential for conflicts of interest in such arrangements and whether the arrangement has the potential to benefit the Company;
- considering and, if appropriate, establishing a policy designed to encourage executive officers and directors to acquire and hold a meaningful equity interest in the Company; and
- evaluating the efficacy of the Company's compensation policy and strategy in achieving expected benefits to the Company and otherwise furthering the Committee's policies.

(b) Recommend Compensation. Evaluate the performance of the CEO and other Senior Officers in light of the corporate goals and objectives. Make recommendations to the Board with respect to the compensation of the CEO and the compensation of other Senior Officers (including without limitation, "executive officers" as defined in Section 16 of the Exchange Act and Rule 16a-1 thereunder, and "Named Executive Officers" as defined under (i) Form 51-102F6 promulgated under National Instrument 51-102 Continuous Disclosure Obligations and (ii) Item 402 of Regulation S-K under the Exchange Act), including individual elements of salary, bonus, incentive and equity compensation. Make recommendations to the Board regarding the compensation policies for the non-employee directors. The Committee may consult with the CEO in determining its recommendation to the Board for the executive compensation for any Senior Officer other than the CEO. The Company's CEO may not be present during the vote or deliberations regarding his or her compensation

(c) Senior Officer Contracts. Make recommendations to the Board with respect to all employment agreements, separation and severance agreements, and other compensatory contracts, arrangement, prerequisites and payments for Senior Officers to ensure such agreements are consistent with the Company's general compensation goals.

(d) Equity Plan Awards. Make recommendations to the Board with respect to the grant of incentive share options to the Company's employees, officers, consultants and directors, under the Company's option plans, share appreciation plans, bonus plans, deferred compensation plans and similar

programs. Make recommendations to the Board with respect to amendments to or terminations of such plans and the implementation of any other equity based compensation plan.

(e) Insurance Coverage. The Committee shall review and make recommendations to the Board concerning the appropriate insurance coverage for the Company's directors and executive officers.

(f) Evaluate Incentive-Compensation and Equity-Based Plans. Periodically review and make recommendations to the Board concerning the Company's incentive-compensation and equity-based plans. Ensure that all equity-compensation plans and material revisions to such plans are approved by the Company's shareholders. As requested from time to time by the Board, review and make recommendations regarding any exception to the shareholder approval requirement permitted by law and stock exchange requirements and with respect to any change to the Company's compensation and benefit plans involving a material annual change in cost to the Company.

The approval of this Compensation Committee Charter shall be construed as delegation of authority to the Compensation Committee with respect to the responsibilities set forth herein.