

**Charter of the Compensation Committee
of the Board of Directors of Ionis Pharmaceuticals, Inc.**

Composition; Independence. The Compensation Committee of the Board of Directors of Ionis Pharmaceuticals, Inc. will consist of at least two directors. Each member of the Compensation Committee must be independent of the Company, as determined by the Board that such member has no relationship which would interfere with the exercise of independent judgment in carrying out the responsibilities of a Committee member; provided each member of the Committee will satisfy:

- the independence requirements of The Nasdaq Stock Market (“Nasdaq”), as in effect from time to time;
- the “non-employee director” standard within the meaning of Rule 16b-3 of the 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 Internal Revenue Code of 1986, as amended from time to time.

Functions and Responsibility. The Compensation Committee is charged with the following functions:

1. Overall Compensation Strategy. The Committee will review, modify (as needed) and approve the overall compensation strategy and policies for the Company, including:

- reviewing and approving corporate performance goals and objectives relevant to the compensation of the Company’s Executive Officers;
- evaluating and recommending to the Board the compensation plans and programs advisable for the Company, as well as modification or termination of existing plans and programs;
- establishing policies with respect to equity compensation arrangements;
- reviewing and approving compensatory arrangements for the Company’s Executive Officers; and
- evaluating risks associated with and potential consequences of the Company’s compensation policies and practices, as applicable to all employees of the Company, and assessing whether risks and consequences arising from such compensation policies and practices, as may be mitigated by any other compensation policies and practices, are reasonably likely to have a material adverse effect on the Company.

2. Compensation of Chief Executive Officer. The Committee will determine, in its sole discretion, the compensation and other terms of employment of the Company’s Chief Executive Officer and will evaluate the Chief Executive Officer’s performance in light of relevant corporate performance goals and objectives. The Company’s Chief Executive Officer may not be present during voting or deliberations on his or her compensation.

3. Compensation of Other Executive Officers. The Committee will review and approve the individual and corporate performance goals and objectives of the Company’s Executive Officers,

that are periodically established and will approve the salary, bonus, terms of any employment agreements, severance arrangements, change-of-control protections and any other compensatory arrangements for the Company's Executive Officers.

4. Compensation of Directors. The Committee will recommend to the Board the type and amount of compensation to be paid or awarded to Board members, including consulting, retainer, Board meeting, committee and committee chair fees and stock option grants or other stock awards.

5. Administration of Benefit Plans. The Committee will recommend to the Board the adoption, amendment and termination of the Company's stock option plans, stock appreciation rights plans, pension and profit sharing plans, incentive plans, stock bonus plans, stock purchase plans, bonus plans, deferred compensation plans and similar programs. The Committee will have full power and authority to administer these plans, establish guidelines, interpret plan documents, select participants, approve grants and awards, and exercise such other power and authority as may be permitted or required under such plans.

6. To perform such other functions and have such other powers as may be necessary or convenient in the efficient discharge of the foregoing.

7. To report to the Board of Directors from time to time, or whenever it will be called upon to do so. Minutes of each meeting of the Compensation Committee will be prepared and distributed to each director of the Company promptly after such meeting.

Internal and External Advisors; Independence of Advisors. The Committee will have full access to all books, records, facilities and personnel of the Company as deemed necessary or appropriate by any member of the Committee to discharge his or her responsibilities hereunder. The Committee will have the authority, in its sole discretion, to obtain, at the expense of the Company, advice and assistance from internal or external legal, accounting or other advisors and consultants; *provided* that in the exercise of its judgment the Committee is not required to implement or act consistently with the advice or recommendations of any compensation consultant, legal counsel or other advisor. The Committee is directly responsible for the appointment, compensation and oversight of the work of such legal counsel, advisors and consultants. When selecting, or receiving advice from, any compensation consultant, legal counsel or other advisor, other than in-house legal counsel, the Committee will review, discuss and consider the factors set forth in the SEC rules and regulations promulgated under Section 10C-1 of the Exchange Act (as further listed on Schedule 1 attached hereto), as well as any other factors identified by applicable Nasdaq rules.

Annual Review of Charter. The Committee will review and reassess the adequacy of this Charter at least once per year, and recommend any proposed changes to the Board for its consideration. The approval of this Charter by the Board will be a delegation of authority to the Committee regarding the responsibilities set forth in this Charter.

The operation of the Compensation Committee will be subject to the Bylaws of the Company as in effect from time to time and Section 141 of the Delaware General Corporation Law.

Schedule 1

Factors to Review and Consider When Engaging Compensation Consultants, Legal Counsel or other Advisors

(i) the provision of other services to the Company by the person that employs the compensation consultant, legal counsel or other adviser;

(ii) the amount of fees received from the Company by the person that employs the compensation consultant, legal counsel or other adviser, as a percentage of the total revenue of the person that employs the compensation consultant, legal counsel or other adviser;

(iii) the policies and procedures of the person that employs the compensation consultant, legal counsel or other adviser that are designed to prevent conflicts of interest;

(iv) any business or personal relationship of the compensation consultant, legal counsel or other adviser with a member of the compensation committee;

(v) any stock of the Company owned by the compensation consultant, legal counsel or other adviser; and

(vi) any business or personal relationship of the compensation consultant, legal counsel, other adviser or the person employing the adviser with an Executive Officer of the Company.