

BLUEPRINT MEDICINES CORPORATION

RESEARCH AND DEVELOPMENT COMMITTEE CHARTER

Adopted on December 19, 2012

A. PURPOSE AND SCOPE

The purpose of the Research and Development Committee (the “*Committee*”) of the Board of Directors (the “*Board*”) of Blueprint Medicines Corporation, a Delaware corporation (the “*Company*”) is (a) to assist the Company in evaluating research and development issues and decisions and (b) to provide to the Board a detailed perspective on research and development efforts. The Committee has the authority to undertake the specific responsibilities and duties listed below and will have the authority to undertake such other specific duties as the Board from time to time prescribes. For clarity, absent express delegation by the Board, the Committee will have the general authority to make recommendations to the Board on the matters described herein, but will not have the authority to act on behalf of the Board.

B. COMPOSITION AND MEETINGS

All members of the Committee shall be appointed by, and shall serve at the pleasure of, the Board. Unless a Committee chairperson is appointed by the Board, the members of the Committee may designate a chairperson by majority vote of the Committee membership. Meetings of the Committee will be held, from time to time, at the pleasure of the Board and the members of the Committee. Minutes will be kept of each meeting of the Committee and will be provided to each member of the Board. The Committee may make rules for the conduct of its business, but in the absence of such rules its business shall be conducted so far as possible in the same manner as is provided in the Company’s By-laws for the conduct of business by the Board.

C. RESPONSIBILITIES AND DUTIES

To fulfill its responsibilities and duties, the Committee shall have the power to:

- Provide a general oversight function regarding pre-clinical and clinical decision-making through a series of semi-annual pipeline reviews and in-depth assessments of select project strategies and plans.
- Provide recommendations regarding key molecules in the Company’s discovery and development pipelines through reports and select in-depth project reviews.
- Provide recommendations regarding the Company’s pipeline/portfolio balance from a scientific and clinical perspective, including: new molecular entity vs. new indication balance, mechanism balance, target balance and general risk balance.
- Provide recommendations regarding key discovery and development strategies to align with business needs of the Company.

- Provide feedback to the Board of Directors and to the Company's Research and Development group.

The Committee shall have such other responsibilities and authority as may be determined from time to time by the Board. In connection with performing its responsibilities and duties, the Committee is authorized to engage, at the expense of the Company, outside consultants to assist the Committee as necessary or appropriate, up to a cap of \$25,000 annually, unless otherwise authorized by the Board.

On a periodic basis, evaluation of the performance of the Committee shall be conducted by a sub-committee nominated by the Board (that does not include members of the Committee), including review and reassessment of the adequacy of this Charter and, if appropriate, recommend proposed changes to the Board for approval.

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