# BioMarin Submits Marketing Authorization Application to European Medicines Agency for Valoctocogene Roxaparvovec to Treat Severe Hemophilia A

**1st Marketing Application Submission for Gene Therapy Directed at Any Type of Hemophilia**
**Application Expected to be Reviewed Under Expedited Accelerated Assessment Designation**

SAN RAFAEL, Calif., Nov. 21, 2019 /PRNewswire/ -- BioMarin Pharmaceutical Inc. (NASDAQ: BMRN) announced today that the company submitted a Marketing Authorization Application (MAA) to the European Medicines Agency (EMA) for its investigational gene therapy, valoctocogene roxaparvovec, for adults with severe hemophilia A. Subject to completion of EMA's validation check, BioMarin anticipates the start of the MAA review to commence in January 2020 under accelerated assessment. BioMarin will provide an update in January 2020.

Recognizing valoctocogene roxaparvovec for its potential to benefit patients with unmet medical needs, EMA granted access to its Priority Medicines (PRIME) regulatory initiative in 2017 and recently granted BioMarin's request for accelerated assessment of this MAA, potentially shortening the review period. This submission is based on an interim analysis of study participants treated in an ongoing Phase 3 study with material from the to-be-commercialized process and updated three-year Phase 1/2 data. This submission marks the first marketing application submission for a gene therapy product for any type of hemophilia.

Accelerated assessment reduces the time-frame for the EMA Committee for Medicinal Products for Human Use (CHMP) and Committee for Advanced Therapies (CAT) to review a MAA for an Advanced Therapy Medicinal Product (ATMP). Applications are eligible for accelerated assessment if the CHMP and CAT decide the product is of major interest for public health, particularly from the point of view of therapeutic innovation. Evaluating a MAA under the EMA centralized procedure can take up to 210 days, not counting clock stops when applicants are requested to provide additional information. On request, the CHMP and CAT can reduce the time-frame to 150 days if the applicant provides sufficient justification for an accelerated assessment, although an application initially designated for accelerated assessment can revert to the standard procedure during the review for a variety of reasons. The decision to grant accelerated assessment has no impact on the eventual CHMP and CAT opinion on whether a marketing authorization should be granted.

The company remains on track to submit a Biologics License Application (BLA) to the U.S. Food and Drug Administration (FDA) by the end of the year. The FDA has granted valoctocogene roxaparvovec Breakthrough Therapy designation. Valoctocogene roxaparvovec has Orphan Drug designation from the FDA and the EMA.

"We are grateful to the study participants, who have made this progress possible in the span of approximately four years since the first participant was enrolled in the clinical program," said Hank Fuchs, M.D., President, Global Research and Development at BioMarin. "We are very pleased with the level of engagement we have had with global health authorities, as it aligns with our belief that gene therapy represents the next wave of innovation and potentially could be a meaningful advancement for treating people with severe hemophilia A."

**About Hemophilia A**

People living with hemophilia A lack enough functioning Factor VIII protein to help their blood clot and are at risk for painful and/or potentially life-threatening bleeds from even modest injuries. Additionally, people with severe hemophilia A often experience painful, spontaneous bleeds into their muscles or joints. Individuals with hemophilia A diagnosed as severe make up 43 percent of the hemophilia A population. The standard of care for severe hemophilia A is a prophylactic regimen of replacement Factor VIII infusions administered intravenously up to two to three times per week. Despite these regimens, many people continue to experience bleeds, resulting in progressive and debilitating joint damage, which can have a major impact on their quality of life.

Hemophilia A, also called Factor VIII deficiency or classic hemophilia, is an X-linked genetic disorder caused by missing or defective Factor VIII, a clotting protein. Although it is passed down from parents to children, about 1/3 of cases are caused by a spontaneous mutation, a new mutation that was not inherited. Approximately 1 in 10,000 people have Hemophilia A.

**About BioMarin**

BioMarin is a global biotechnology company that develops and commercializes innovative therapies for serious

and life-threatening rare and ultra-rare genetic diseases. The Company's portfolio consists of seven commercialized products and multiple clinical and pre-clinical product candidates. For additional information, please visit www.biomarin.com. Information on BioMarin's website is not incorporated by reference into this press release.

**Forward Looking Statement**

This press release contains forward-looking statements about the business prospects of BioMarin Pharmaceutical Inc., including without limitation, statements about development of BioMarin's valoctocogene roxaparvovec program generally and; the timing of the company's regulatory submissions in the U.S and Europe, expectations for review standards and timing of responses by regulatory agencies. These forward-looking statements are predictions and involve risks and uncertainties such that actual results may differ materially from these statements. These risks and uncertainties include, among others: results and timing of current and planned preclinical studies and clinical trials of valoctocogene roxaparvovec; additional data from the continuation of the Phase 1/2 trial and the Phase 3 trial, any potential adverse events observed in the continuing monitoring of the participants in the clinical trials; the content and timing of decisions by the U.S. Food and Drug Administration, the European Commission and other regulatory authorities, including the possibility that the EMA to revert the review pathway to a standard review; the content and timing of decisions by local and central ethics committees regarding the clinical trials; our ability to successfully manufacture valoctocogene roxaparvovec for the clinical trials and commercially, if approved; and those other risks detailed from time to time under the caption "Risk Factors" and elsewhere in BioMarin's Securities and Exchange Commission (SEC) filings, including BioMarin's Quarterly Report on Form 10-Q for the quarter ended September 30, 2019, and future filings and reports by BioMarin. BioMarin undertakes no duty or obligation to update any forward-looking statements contained in this press release as a result of new information, future events or changes in its expectations.



Contacts:

| Investors | Media |
| --- | --- |
| *Traci McCarty* | *Debra Charlesworth* |
| *BioMarin Pharmaceutical Inc.* | *BioMarin Pharmaceutical Inc.* |
| *(415) 455-7558* | *(415) 455-7451* |


SOURCE BioMarin Pharmaceutical Inc.

---