

Update for PKU Patient Associations

BioMarin is a global pharmaceutical company with more than 20 years of experience in developing medicines for rare genetic conditions.

For the past 15 years, BioMarin has invested in ground-breaking science to bring two pharmacological therapies for PKU to regulatory approval.

BioMarin is expanding the PKU program to study an investigational gene therapy known as BMN 307. On January 13th, BioMarin announced that both the Food and Drug Administration (FDA) in the USA and the Medicines and Healthcare Products Regulatory Agency (MHRA) in the U.K have granted the company approval of its Investigational New Drug (IND) status and Clinical Trial Application (CTA) respectively.

With these regulatory approvals, BioMarin can now begin a clinical study with BMN 307 (BMN 307-201 known as the Phearless study) in the USA and the UK in the first quarter of 2020. The company is actively preparing for clinical study submissions in other countries worldwide.

Gene therapy for PKU has not been proven safe or effective and is not available for doctors to prescribe. It is only available as part of a regulated and approved study. The results of these studies will be reviewed by regulators who will then decide whether to approve the therapy for doctors to prescribe outside of a clinical study.

Open Study

Phenom: A study using new technologies and tools to better understand PKU by learning more about Phe levels, diet and other health problems in people with PKU



- The Phenom study uses cutting edge wearable and mobile technologies to learn more about the real-time problems facing people with PKU
- Currently open for enrollment in the USA; enrollment in the UK to begin early 2020
- Participants will not receive an investigational medicine
- Phenom participants will have priority for enrollment into the Phearless gene therapy study described below if they meet Phearless entry requirements (known as eligibility criteria).



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Future Study

Phearless: phase 1/2 dose finding study



- This clinical study is designed to study the safety and efficacy (whether there are side effects and if it works) of a single injection of BMN 307 gene therapy
- The study will also test whether a single dose of gene therapy delivered directly into the vein can restore the natural functioning of Phe metabolism in patients with PKU, normalizing plasma Phe and enabling a normal diet
- Study will have a dose-finding phase, followed by a phase to further evaluate safety and efficacy
- Enrollment starting early 2020
- Individuals who have participated in the Phenom study will have priority for enrollment into the Phearless gene therapy study

Gene Therapy Manufacturing

BioMarin has built one of the first gene therapy manufacturing facilities of its kind in the world. This facility can support up to 4,000 doses per year. The BMN 307 PKU gene therapy clinical production is being produced at this facility. Production of material at commercial scale can speed overall development timelines.

BioMarin are committed to advancing innovative treatments for people living with PKU. BioMarin will seek to work collaboratively with the PKU patient community and all approval bodies to reach the shared goal of sustainable access for patients for future therapies.

Your medical team remains the best source of advice for you or your family regarding PKU.

For further information, please contact patientadvocacy@bmrn.com. Alternatively, BioMarin Medical Information may be contacted by medinfo@bmrn.com

About PKU and Gene Therapy

PKU is caused by inheriting two faulty copies of the gene needed to form the enzyme phenylalanine hydroxylase (PAH) that the body uses to break down the amino acid phenylalanine (Phe). Gene therapy is an investigational form of treatment designed to introduce to the patient's body a working copy of the gene. With introduction of a new copy of the PAH gene, the goal is for the cell to produce the missing PAH enzyme.

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For additional information on BioMarin clinical studies:

- When posted, visit www.clinicaltrials.gov and type in the study code BMN 307
- For inquiries or to provide feedback from advocacy organizations, please contact patientadvocacy@bmrn.com
- Contact BioMarin Medical Information toll free at 1-800-983-4587 or medinfo@bmrn.com