Bioverativ Presents Preliminary Phase 1/2a Data on BIVV001, the First Factor VIII Therapy to Break Through the VWF Half-life Ceiling in Hemophilia A

BIVV001 demonstrates unprecedented half-life of 37 hours with high factor VIII activity of 5.6% at seven days following a single low dose in late-breaking presentation at WFH 2018 World Congress

Bioverativ is now exploring twice-a-month dosing with BIVV001, which could transform the treatment paradigm in hemophilia A

WALTHAM, Mass. – May 21, 2018 - Bioverativ Inc., a Sanofi company dedicated to transforming the lives of people with rare blood disorders, today presented initial clinical data for BIVV001 (rFVIIIFc-VWF-XTEN), a novel and investigational von Willebrand factor (VWF)-independent factor VIII therapy for people with hemophilia A. Preliminary safety and pharmacokinetic data from the ongoing EXTEN-A Phase 1/2a study showed that a single low dose of BIVV001 extended the half-life of factor VIII to 37 hours with high factor activity levels, and was generally well tolerated. The data were presented at a late-breaking session at the World Federation of Hemophilia (WFH) 2018 World Congress being held in Glasgow, Scotland.

“For decades, scientists have been trying to overcome the von Willebrand factor ceiling, which imposes a limit on the half-life of factor VIII, and these data demonstrate that BIVV001 has finally broken through that ceiling,” said Joachim Fruebis, Senior Vice President of Development at Bioverativ. “Importantly for the hemophilia community, the factor levels seen in this study are unparalleled in hemophilia A, and we are excited about the potential for BIVV001 to transform the treatment paradigm for patients and physicians.”

Factor replacement therapy is fundamental in the treatment of hemophilia A, as it naturally provides what is missing in the body (clotting factor VIII), and it has a consistent and well-characterized safety and efficacy profile. BIVV001 is an investigational factor VIII therapy that has the potential to provide comprehensive protection in all treatment scenarios including management of acute bleeds, perioperative care, emergency situations, and prophylactic use. The role of factor also goes beyond the coagulation cascade and may have a role to play in joint and bone health of people with hemophilia.

Factor activity levels refer to the amount of factor VIII in a person’s plasma, and they determine a person’s symptoms. Participants in the EXTEN-A trial have severe hemophilia A (<1%). Moderate hemophilia A is characterized by factor levels of 1-5%, and mild hemophilia A is from 6-49%.

About the Preliminary EXTEN-A Results
EXTEN-A is an ongoing Phase 1/2a, open-label, multicenter study to evaluate the safety and pharmacokinetic (PK) of BIVV001 in both a low-dose and high-dose cohort of subjects aged 18-65 years with severe hemophilia A. In the data presented at the WFH World Congress, four adult males from the
low-dose cohort received a single dose of rFVIII (25 IU/kg) followed, after a washout period, by a single low dose of BIVV001 (25 IU/kg). Primary endpoints include occurrence of adverse events and development of inhibitors. Secondary endpoints related to pharmacokinetic parameters were also presented. Key findings included (cut-off 20 April 2018):

- A single, low dose of BIVV001 extended the half-life of factor VIII to 37 hours, a substantial increase over the 13 hours seen with rFVIII
- Average factor VIII activity for the four subjects was 13.0% at five days and 5.6% at seven days post infusion with a single low dose of BIVV001
- BIVV001 was generally well tolerated, with no development of inhibitors

Additional information about this study can be found at ClinicalTrials.gov using identifier: NCT03205163.

About BIVV001
BIVV001 (rFVIIIFc-VWF-XTEN) is a novel and investigational recombinant factor VIII therapy that is designed to extend protection from bleeds with prophylaxis dosing of once weekly or longer for people with hemophilia A. BIVV001 builds on the company’s innovative Fc fusion technology by adding a region of von Willebrand factor and XTEN polypeptides to potentially extend its time in circulation. It is the only therapy that has been shown to break through the von Willebrand factor ceiling, which is believed to impose a half-life limitation on current factor VIII therapies. BIVV001 was granted orphan drug designation by the Food and Drug Administration in August 2017.

About Hemophilia A
Hemophilia is a rare, genetic disorder in which the ability of a person's blood to clot is impaired. Hemophilia A occurs in about one in 5,000 male births annually, and more rarely in females. The World Federation of Hemophilia estimates that approximately 150,000 people are currently diagnosed with hemophilia A worldwide.iii

People with hemophilia A experience bleeding episodes that can cause pain, irreversible joint damage and life-threatening hemorrhages. Prophylactic injections of factor VIII can temporarily replace the clotting factor that is needed to control bleeding and prevent new bleeding episodes.iv The World Federation of Hemophilia (WFH) recommends prophylaxis as the optimal therapy as it can prevent bleedings and joint destruction.v

About Bioverativ, a Sanofi company
Bioverativ, a Sanofi company, is dedicated to transforming the lives of people with hemophilia and other rare blood disorders through world-class research, development, and commercialization of innovative therapies. Bioverativ is committed to actively working with the blood disorders community, and its hemophilia therapies when launched represented the first major advancements in hemophilia treatment in more than two decades. For more information, visit www.bioverativ.com or follow @bioverativ on Twitter.

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ii National Hemophilia Foundation, Hemophilia A. Available at https://www.hemophilia.org/Bleeding-Disorders/Types-of-Bleeding-Disorders/Hemophilia-A. Accessed May 17, 2018

