



## ***New England Journal of Medicine* publishes positive final results from Phase 1/2a study of BIVV001 in people with severe hemophilia A**

- \* BIVV001 is the first investigational factor VIII therapy independent of von Willebrand Factor and has the potential to transform replacement therapy for people with hemophilia A
- \* It is uniquely designed to deliver near-normal factor activity levels for the majority of the week, extending bleed protection in a once-weekly dose
- \* Results from the Phase 1/2a study showed that a single dose of BIVV001 achieved high sustained factor activity and a three- to four-fold increase in half-life when compared to conventional factor VIII replacement therapies

**PARIS and STOCKHOLM – September 10, 2020** –The [\*New England Journal of Medicine\*](#) today published positive final results from the Phase 1/2a trial evaluating the safety, tolerability and pharmacokinetics of BIVV001 (rFVIII<sub>FC</sub>-VWF-XTEN) in adult patients with severe hemophilia A. BIVV001 is an investigational factor VIII therapy designed to provide higher bleed protection in a once-weekly prophylactic treatment regimen. Sanofi and Sobi™ (STO:SOBI) collaborate on the development and commercialization of BIVV001.

*“BIVV001 represents a potential new class of factor VIII replacement therapies. The sustained factor activity levels and three- to four-fold increase in half-life observed underscore its potential to provide near-normal bleed protection while reducing the dosing frequency of a prophylactic treatment to once a week,”* said Barbara A. Konkle, MD, lead investigator and Chief Scientific Officer, Bloodworks Northwest and Professor of Medicine/Hematology, University of Washington. *“These results support the conclusion that BIVV001 may be a significant advancement for patients and we look forward to exploring this further in the ongoing Phase 3 study.”*

### **Phase 1/2a study results**

EXTEN-A is an open-label, multicenter study that evaluated the safety, tolerability and pharmacokinetics of BIVV001 in both a 25 IU/kg (n=6) and a 65 IU/kg (n=8) dose cohort of participants aged 19-63 years with severe hemophilia A (NCT03205163). In the trial, participants received a single dose of conventional recombinant factor VIII (rFVIII) followed, after a washout period, by either a single 25 IU/kg or 65 IU/kg dose of BIVV001. Primary endpoints included occurrence of adverse events and development of inhibitors. Key findings included:

- BIVV001 was generally well tolerated with no inhibitor development detected through 28 days post-dose. During the study period no adverse events of allergic

reaction, anaphylaxis, or clinically meaningful treatment-related adverse events were reported.

- In the 65 IU/kg dose cohort, a single dose of BIVV001 achieved a FVIII half-life of 43 hours, a greater than three-fold increase from the 13-hour half-life observed with rFVIII. Mean factor VIII activity level was  $\geq 51\%$  and in the normal range for four days, and 17% at seven days post BIVV001 infusion.
- In the 25 IU/kg cohort, a single dose of BIVV001 achieved a FVIII half-life of 38 hours, a four-fold increase from the 9-hour half-life observed with rFVIII, with a mean factor activity level of 5% at seven days post BIVV001 infusion.

Factor activity levels refer to the amount of factor VIII in a person's blood and are used to determine the severity of a person's disease. Participants enrolled in the EXTEN-A trial have severe hemophilia A (factor levels of  $<1\%$ ). Moderate hemophilia A is characterized by factor levels of 1-5%, and mild hemophilia A is from 5 - 40%.

### **A potential to transform factor replacement therapy for hemophilia A**

The half-life of conventional factor VIII therapy is constrained by the von Willebrand factor's (VWF) chaperone effect, which is believed to limit the time the factor remains in the body. BIVV001 is the first factor VIII therapy under development that has been shown to break through the VWF ceiling, thus allowing people with hemophilia A to potentially move toward normal factor activity levels for the majority of the week.

*“As part of our overall commitment to the hemophilia community, we are excited by the clinical potential of BIVV001 to overcome the limitations of current factor VIII therapies,”* said Dietmar Berger, Global Head of Development and Chief Medical Officer at Sanofi. *“The New England Journal of Medicine’s publication of these early results support the possibility of BIVV001 to provide people with hemophilia A with higher protection for longer, which could allow them to lead a more active life. We look forward to providing future updates as we continue to evaluate BIVV001 in Phase 3 development.”*

*“Factor VIII replacement therapy remains a cornerstone of care in hemophilia A and is a single therapy that can be used across numerous treatment scenarios including, prophylaxis, acute bleed control and perioperative management,”* said Ravi Rao, Head of R&D and Chief Medical Officer at Sobi. *“BIVV001 has the potential to advance factor replacement therapy further by offering patients and physicians near-normal factor levels for the majority of the week whilst reducing treatment burden. We look forward to exploring this further in the Phase 3 study.”*

### **Phase 3 XTEND-1 study**

The safety and efficacy of BIVV001 is currently being evaluated in the ongoing Phase 3 XTEND-1 study in previously treated patients  $\geq 12$  years of age ( $n=150$ ) with severe hemophilia A. XTEND-1 is an open-label, non-randomized interventional study with two parallel assignment arms. Participants in the prophylaxis arm will receive a weekly prophylactic 50 IU/kg dose of BIVV001 for 52 weeks. Participants in the on-demand arm will receive BIVV001 (50 IU/kg) on demand for 26 weeks followed by a switch to BIVV001 weekly prophylaxis for another 26 weeks.

### **About BIVV001**

BIVV001 (rFVIII-Fc-VWF-XTEN) is a novel and investigational recombinant factor VIII therapy that is designed to extend protection from bleeds with once-weekly prophylactic dosing for people with hemophilia A. BIVV001 builds on the innovative Fc fusion technology by adding a region of von Willebrand factor and XTEN polypeptides to extend its time in circulation. It is the first investigational factor VIII therapy that has been shown to break through the von Willebrand factor ceiling, which imposes a half-life limitation on current factor VIII therapies. BIVV001 was granted orphan drug designation by the US Food and Drug Administration in August 2017 and the European Commission in June 2019. BIVV001 is currently under clinical investigation and its safety and efficacy have not been reviewed by any regulatory authority.

### **About Sobi**

Sobi is a specialised international biopharmaceutical company transforming the lives of people with rare diseases. Sobi is providing sustainable access to innovative therapies in the areas of haematology, immunology and specialty indications. Today, Sobi employs approximately 1,400 people across Europe, North America, the Middle East, Russia and North Africa. In 2019, Sobi's revenues amounted to SEK 14.2 billion. Sobi's share (STO:SOBI) is listed on Nasdaq Stockholm. You can find more information about Sobi at [www.sobi.com](http://www.sobi.com).

### **About Sanofi**

Sanofi is dedicated to supporting people through their health challenges. We are a global biopharmaceutical company focused on human health. We prevent illness with vaccines, provide innovative treatments to fight pain and ease suffering. We stand by the few who suffer from rare diseases and the millions with long-term chronic conditions.

With more than 100,000 people in 100 countries, Sanofi is transforming scientific innovation into healthcare solutions around the globe.

Sanofi, Empowering Life

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*This press release contains forward-looking statements as defined in the Private Securities Litigation Reform Act of 1995, as amended. Forward-looking statements are statements that are not historical facts. These statements include projections and estimates and their underlying assumptions, statements regarding plans, objectives, intentions and expectations with respect to future financial results, events, operations, services, product development and potential, and statements regarding future performance. Forward-looking statements are generally identified by the words “expects”, “anticipates”, “believes”, “intends”, “estimates”, “plans” and similar expressions. Although Sanofi’s management believes that the expectations reflected in such forward-looking statements are reasonable, investors are cautioned that forward-looking information and statements are subject to various risks and uncertainties, many of which are difficult to predict and generally beyond the control of Sanofi, that could cause actual results and developments to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements. These risks and uncertainties include among other things, the uncertainties inherent in research and development, future clinical data and analysis, including post marketing, decisions by regulatory authorities, such as the FDA or the EMA, regarding whether and when to approve any drug, device or biological application that may be filed for any such product candidates as well as their decisions regarding labelling and other matters that could affect the availability or commercial potential of such product candidates, the fact that product candidates if approved may not be commercially successful, the future approval and commercial success of therapeutic alternatives, Sanofi’s ability to benefit from external growth opportunities, to complete related transactions and/or obtain regulatory clearances, risks associated with intellectual property and any related pending or future litigation and the ultimate outcome of such litigation, trends in exchange rates and prevailing interest rates, volatile economic and market conditions, cost containment initiatives and subsequent changes thereto, and the impact that COVID-19 will have on us, our customers, suppliers, vendors, and other business partners, and the financial condition of any one of them, as well as on our employees and on the global economy as a whole. Any material effect of COVID-19 on any of the foregoing could also adversely impact us. This situation is changing rapidly and additional impacts may arise of which we are not currently aware and may exacerbate other previously identified risks. The risks and uncertainties also include the uncertainties discussed or identified in the public filings with the SEC and the AMF made by Sanofi, including those listed under “Risk Factors” and “Cautionary Statement Regarding Forward-Looking Statements” in Sanofi’s annual report on Form 20-F for the year ended December 31, 2019. Other than as required by applicable law, Sanofi does not undertake any obligation to update or revise any forward-looking information or statements.*