December 5, 2022

European Medicines Agency Accepts Tofersen Marketing Authorization Application to Treat Rare, Genetic Form of ALS

- SOD1-ALS is a rare, genetic form of ALS,[1] comprising approximately 2% of people with ALS[2]

- If approved, tofersen would be the first treatment to target a genetic cause of ALS

Biogen announced that the European Medicines Agency (EMA) has accepted the Marketing Authorization Application (MAA) for review of tofersen, an investigational drug for the treatment of superoxide dismutase 1 (SOD1) amyotrophic lateral sclerosis (ALS). SOD1-ALS is a progressive and uniformly fatal disease that affects less than 1,000 people in Europe.[2] There is currently no treatment targeted for SOD1-ALS.[3]

"Through our clinical development program, we have seen that tofersen has the potential to slow the progression of this relentless and ultimately fatal disease," said Priya Singhal, M.D., M.P.H., Head of Global Safety and Regulatory Sciences and Interim Head of R&D at Biogen. "Regulatory submissions in the U.S. and now EU represent an important step in our efforts to bring the first genetically-targeted treatment for SOD1-ALS to the ALS community as quickly as possible."

The MAA includes results from the Phase 3 VALOR study, its open label extension (OLE) study, a Phase 1 study in healthy volunteers and a Phase 1/2 study evaluating ascending dose levels. Also included are the most current 12-month integrated results from VALOR and the OLE study that were recently published in *The New England Journal of Medicine*.

"The effects we have seen with tofersen diverge from the natural history of the disease and bring hope for the treatment of SOD1-ALS," said Philip Van Damme, M.D., Ph.D., professor of neurology and director of the Neuromuscular Reference Center at the University Hospital Leuven in Belgium. "Today's announcement is an important milestone for the ALS community in Europe where there is a tremendous need for additional treatment options."

Tofersen is also under review with the U.S. Food and Drug Administration with Priority Review and has a Prescription Drug User Fee Act action date of April 25, 2023.

Biogen will maintain its early access program for tofersen, which is now available in 34 countries. Biogen continues to actively engage with other regulators around the world and will provide updates when appropriate.

About Tofersen
Tofersen is an antisense drug being evaluated as a treatment of SOD1-ALS. Tofersen is designed to bind to SOD1 mRNA, inducing its degradation by RNase-H to reduce SOD1 protein production. In addition to the ongoing open label extension of VALOR, tofersen is being studied in the Phase 3 ATLAS study designed to evaluate whether tofersen can delay clinical onset when initiated in presymptomatic individuals with a SOD1 genetic mutation and biomarker evidence of disease activity. Biogen licensed tofersen from Ionis Pharmaceuticals, Inc. under a collaborative development and license agreement.

References:

1. Trist BG, et al. Altered SOD1 maturation and post-translational modification in amyotrophic lateral sclerosis spinal cord. Brain. 2022 Sep 14;145(9):3108-3130. doi: 10.1093/brain/awac165.

2. Brown CA, Lally C, Kupelian V, Flanders WD. Estimated Prevalence and Incidence of Amyotrophic Lateral Sclerosis and SOD1 and C9orf72 Genetic Variants. Neuroepidemiology. 2021;55(5):342-353. doi: 10.1159/000516752. Epub 2021 Jul 9.

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4. Bali T, et al. Defining SOD1 ALS natural history to guide therapeutic clinical trial design. J Neurol Neurosurg Psychiatry. 2017 Feb;88(2):99-105. doi: 10.1136/jnnp-2016-313521. Epub 2016 Jun 3.

Source: **Biogen press release**