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Extension of Orchardâ??s Collaboration with Manchester University to Include Sanfilippo Syndrome Type B

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Orchard is dedicated to transforming the lives of patients with rare disorders through innovative gene therapies.

Orchard Therapeutics Limited (“Orchard) announced that, it has acquired an exclusive license to develop lentivirus-based autologous ex-vivo gene therapy for Sanfilippo syndrome type B (or MPS-IIIB) from The University of Manchester, UK.

The technology developed in Professor Brian Bigger’s laboratory and recently published in the journal Brain. It involves the use of a high-titre lentiviral vector to drive the expression of a codon-optimized ?-N-acetylglucosaminidase (NAGLU) gene under the control of the myeloid-specific CD11b promoter (LV.CD11b.NAGLU).

MPS-IIIB is a rare neurodegenerative inherited lysosomal storage disease. It is caused by mutations in the NAGLU gene.

The disease, which affects children as early as 2 years of age, results in severe and rapidly progressive brain disease and neurological symptoms. Currently effective treatment option for MPS-IIIB is not available.

This programme in MPS-IIIB complements the existing collaboration program between Orchard, The University of Manchester and Manchester University NHS Foundation Trust in MPS-IIIA.

Autologous ex-vivo lentiviral haematopoietic stem cell gene therapy is expected to correct neurological manifestations.

It happens through the engraftment of subpopulations of haematopoietic stem cells in the central nervous system.Thus it provides the supranormal and widespread enzyme expression throughout the brain.

In both MPS-IIIA and MPS-IIIB, preclinical studies have produced encouraging results, showing a normalization of heparan sulphate levels in the brain and peripheral organs, as well as neurological disease correction.

Dr Jesus Garcia-Segovia, Orchard’s VP Clinical Development, CNS and Metabolic Disorders stated: “The incorporation of MPS-IIIB into our development pipeline is a significant milestone in the consolidation of our neurometabolic franchise, which is currently focused on the development of autologous ex-vivo haematopoietic stem-cell gene therapy for children suffering from MPS-IIIA.

We are very excited at the possibility of bringing effective treatments capable of addressing the high unmet medical need in children suffering from these devastating conditions”.

Prof Brian Bigger, Professor of Cell and Gene Therapy in the Faculty of Biology, Medicine and Health, The University of Manchester commented: “It’s incredibly exciting for us to work with our trusted partner Orchard Therapeutics to translate another autologous ex-vivo gene therapy that has demonstrated efficacy in a preclinical mouse model of MPS-IIIB into clinical development and scale-up”.

Dr. Andrea Spezzi, Orchard’s Chief Medical Officer added: “MPS-IIIA and MPS-IIIB are devastating diseases. Orchard and its collaborators are highly motivated to develop gene therapies to address the root cause of these disorders and will work tirelessly to make treatments available to patients as soon as possible.

We are now focussing all our efforts on completing the preclinical activities required, to start the clinical studies in MPS-IIIA till the end of 2018 and thereafter in MPS-IIIB”.

Orchard’s development pipeline of autologous ex-vivo gene therapies includes novel treatments for primary immune deficiencies, and inherited metabolic disorders including other undisclosed early and late-stage programmes.