



October 8th, 2019

Luxna Biotech Co., Ltd.

Notice: New Oligonucleotides Therapeutics Discovery Collaboration Agreement

Luxana Biotech Co., Ltd. (Osaka, President and CEO Hideaki Sato, hereinafter referred to as “Luxana Biotech”) and Aichi Medical University (Aichi, hereinafter referred to as “Aichi Medical Univ.”) concluded a collaboration agreement. This collaboration agreement is based on the research theme “Drug Discovery of Spinal Cord Injury with a Neural Regeneration Promoting Effect” by Professor Kosei Takeuchi from Aichi Medical of Medical which was supported by the Drug Discovery Support Network of the Division of Strategic Planning and Evaluation, AMED. We aim to apply the therapeutics agent to a clinic.

Spinal cord injury occurs mainly due to traffic accidents or sports-related accidents, but in recent years, especially in Japan, along with super-aging, the number of elderly patients with spinal cord injury have been increasing because of falling. 130,000 to 250,000 people occur spinal cord injury worldwide every year but there is no established treatment for paralysis caused by this injury. Patients who have an injury to the spinal cord may remain completely or partially paralyzed, which causing a significant reduction in the patient's quality of life (QOL). In addition, there are many cases that care is required due to paralysis, and the mental and social burdens and economic losses against the patient family are increasing.

In the central nervous system, glial scar is formed immediately after damage in the damaged portion for infection defense of the nervous system. Since the glial scar is consist of chondroitin sulfate proteoglycan (CS) as a main component, inhibition of CS biosynthesis promotes the neural axonal elongation. Moreover, because inhibition of chondroitin sulfate glycosyltransferase which controls CS biosynthesis, it is difficult to be targeted by conventional small molecule drugs. Therefore, Professor Takeuchi and National Institutes of Biomedical Innovation, Health, and Nutrition (NIBIOHN) laboratory of XNA screening and design group were carried out antisense (ASO) screening and concept verification for chondroitin sulfate glycosyltransferase in spinal cord injury animal models.

In this joint research based on the research result by Professor Takeuchi and his team and ASO drug discovery technologies by Luxna Biotech, we will create a new treatment for spinal cord injury that inhibits scar formation and enhances nerve regeneration.

Therapeutics which can be used in the clinical setting based on this research will reduce patients' paralysis with spinal cord injury caused by various accidents, greatly improve QOL through recovery of motor function, lower the patient care level, which helps patients independent and rehabilitation. Those can extend healthy life

expectancy as well. In addition, we aim to build an industrial base for the creation of oligonucleotide therapeutics based on modified nucleic acid technology originated in Japan and to expand oligonucleotide therapeutics overseas.

About Antisense Oligonucleotide (ASO)

Nucleic acid derivatives that bind to messenger RNA (mRNA), a blueprint for proteins, and can regulate protein synthesis in vivo. Since it doesn't act on protein but mRNA, it enables drug discovery for diseases that cannot be targeted by conventional drug discovery modalities.

About Luxna Biotech Co., Ltd.

Luxna Biotech was founded to support patients who are suffering from diseases and to create oligonucleotide therapeutics by installing technologies that promote the use of oligonucleotide therapeutics in the clinical setting.

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