

Luxnas Biotech Co., Ltd

Address

C907, Technoalliance Bldg.,
2-8 Yamadaoka, Suita City, Osaka

URL

<https://luxnabiotech.co.jp/ja/about>

Nucleic Acids Therapeutics Development to Help Patients Fight Their Illnesses

Luxnas Biotech Co., Ltd is a venture of Osaka Univ. that has created a nucleic acid drug development platform utilizing a group of artificially modified nucleic acids created by Professor Obika and his colleagues. We aim for practical application through joint research with pharmaceutical companies and universities, technology licensing to pharmaceutical companies, and early out-licensing of our drugs.

Company Profile

◆ Business Overview

Luxnas Biotech, Inc. uses the artificial modified nucleic acid technology developed at the Osaka Univ. School of Pharmaceutical Sciences to improve the efficacy, sustainability and safety of nucleic acids in two ways. 1) To promote its application, joint R&D projects with pharmaceutical companies and biotech ventures are done. 2) We are developing drugs using nucleic acid medicine technology on disease seeds obtained from academia. Our company also has the technology to create new drugs by adjusting the structure of molecules produced by artificial nucleic acids, an organic chemical that does not exist in nature. Pharmaceutical companies and academia that target patients with genetic, immunological, and psychiatric diseases that are difficult to treat with conventional medical technologies face the following obstacles: ① lack of in-house methods to design appropriate nucleic acid sequences, ② uncertainty about which structures to use, and ③ problems with toxicity and bio-stability, and challenges in drug approval review. To address them, we aim to become a major player in nucleic acid drug development by providing value through the company's expertise in sequence design, provision of appropriate compounds, and selection of modifications and synthesis methods with production efficiency in mind.

Luxnas Biotech is named in the hope that the development of nucleic acid drugs based on modified nucleic acids (XNAs) will bring a light (Lux) to patients who are still suffering from the lack of a cure. The company aims to promote the practical application of safe and effective nucleic acid drugs and deliver them to those who are battling diseases that have no effective drugs.

Features & Strengths

◆ Business Model Features & Strengths

We mainly conduct B to B business and have three business models. First, artificial nucleic acids can overcome pulmonary toxicity and neurotoxicity, so we use them to research new drugs and provide licensing. Second, we develop nucleic acid medicines using disease seeds received from academia and out-license them to pharmaceutical companies. Third, we provide consultation on nucleic acid medicines used for treatment.

Our company's strength is in early drug discovery. We receive funds and conduct joint research with pharmaceutical companies, and upon successful development of drug candidates, receive contracting fees and revenue based on an incentive system respective to the development stage and sales royalties after drug approval. The two contracts, the license agreement for artificially modified nucleic acid technology and the intellectual property of the candidate nucleic acid drug, are designed

with future profits of both sides in mind.

【Origin of Company Name Luxnas Biotech】

病氣と闘う患者さんと支える方々を

“照らす光 Lux”となる

人工核酸 XNA を活用した核酸医薬品を創出

【Luxna Biotech】

ルクサナバイオテック株式会社



XNA (人工修飾核酸) 群

Background of Establishment

◆ Business View

Mr. Sato was a researcher at Jeen Design Co., Ltd, before becoming CEO of Luxnas Biotech, and had a vague idea that a core company would be needed for Japan to lead the world in nucleic acid drugs. Although research in Japan is progressed, most products applying artificial nucleic acids as medicines are created in the U.S. There are two large nucleic acid medicine companies in the U.S., one being Alnylam Pharmaceuticals Inc., which creates siRNA medicine with the application of the Nobel Prize-winning RNAi technology. The other is Ionis Pharmaceuticals Inc., which succeeded in the joint development of the best-selling antisense medicine called Biogen's Spinraza. Mr. Sato thought that Japan could win this competition if we had the ability to identify a candidate compound that implemented core technologies and deliver it with partner companies. He was fortunate to be involved in medicine development collaborations and had a passion to independently create medicines while engaging in business. He also had a strong desire to help patients. When Jeen Design was acquired in 2016, he contemplated his own future. At the time, he heard Professor Obika's research at Osaka Univ. being commercialized. They exchanged thoughts and Mr. Sato decided to set up a business with him in order to realize the commercialization of nucleic acid technology. After discussing the business concept with Professor Obika and Osaka Univ., he resigned from Jeen Design in 2018 and launched Luxana Biotech Co., Ltd.

Vision for the Future

◆ Future Business Outlook

Luxnas Biotech is regarded as a platformer. With the basic technology for providing nucleic acids medicine, we have earnings by two axes: increasing projects and progressing them. If projects are few, sales will decrease when they fail. We thus hope to increase the number of joint development partners and drug candidates. Currently, we start 1-2 new joint projects a year, while our earlier developed products are in the preclinical stage. The technology licensed products are in the stage of starting clinical development and we are still increasing the number of new drug discovery projects. Our goal is to start 3-5 new joint projects a year, move earlier developed products closer to the clinical stage, and move to the approval stage for technology licensed products. However, offering high quality medicines has been our strong hope since our establishment, so it is important to build a strong, cooperative relationship with our partners.

【Artificially Modified Nucleic Acids Merits】

ルクサナの“人工修飾核酸”の核酸医薬品創薬におけるメリット

高度な安全性	特徴ある効果	中枢系優位性	持続性と活性
劇的な肝毒性低減	肝臓だけでなく心臓や骨格筋で有効	急性神経毒性の回避・高い持続性	生体組織における高い安定性と高活性

【Luxnas Biotech Staff Photo】

