

Nippon Shokubai Announces Signing of License Agreement with Rena Therapeutics Inc.

**–to Start Heteroduplex Oligonucleotide (HDO) Synthesis Service for
Pharmaceutical Companies and Academia Both Within and Outside Japan–**

NIPPON SHOKUBAI CO., LTD. (Headquarters: Osaka, Japan, President: Kazuhiro Noda, hereinafter “Nippon Shokubai”) has concluded a license agreement with its affiliate company, Rena Therapeutics Inc. (Headquarter: Tokyo, Japan, President: Shuichi Toriya, hereinafter “Rena Therapeutics”), to manufacture and sell research reagent of Heteroduplex Oligonucleotide (hereinafter “HDO”) in countries where the patents exist. With the conclusion of this agreement, Nippon Shokubai begins providing HDO synthesis and sales service (hereinafter “the Service”) to industry and academia in Japan and worldwide.

Oligonucleotide drugs composed of nucleoside molecules have been expected to be a new modality for treating various intractable diseases, such as cancer and genetic disorders. Still, there are issues such as instability in blood and side effects after administration. The HDO technology, a fundamental drug discovery platform technology at Rena Therapeutics, has a structure (Figure 1) in which ligand molecules providing DDS (Drug Delivery System) combine with a double strand composed of the antisense strand (e.g., DNA, Gapmer, PMO (Phosphorodiamidate morpholino oligomer)) and its complementary carrier strand (RNA). The technology is expected to be an innovative solution to overcome the issues with oligonucleotide drugs because it can selectively deliver the active strand to the disease site.



Figure 1 Heteroduplex Oligonucleotide (HDO) Structure (made by Rena Therapeutics)

Nippon Shokubai will contribute to expanding the opportunities for using HDO and support new drug discovery through the service.

Overview of the service:

https://www.shokubai.co.jp/en/wordpress/wp-content/uploads/2023/02/Information_HDO-Trial-Service.pdf

Nippon Shokubai owns GMP facility for manufacture of middle-molecular APIs, such as oligonucleotides and peptides. We will support health and wellness of people and contribute to the continuous development of society by promoting the supply of various kinds of middle-

molecular APIs.

About Rena Therapeutics:

Rena Therapeutics is a venture company authorized by Tokyo Medical and Dental University (TMDU) in order to accelerate the Heteroduplex Oligonucleotide (HDO) technology and drive commercialization of oligonucleotide drugs. The HDO technology is invented by Professor Takanori Yokota of TMDU, Professor Satoshi Obika of Osaka University and others. Evaluated the high possibility of HDO technology, Rena Therapeutics executed nonexclusive license agreements with Ionis Pharmaceuticals, Inc. which is global leading company in RNA targeted drug discovery and development, and Takeda Pharmaceutical Company Limited. which is the largest Pharmaceutical company in Japan.

<https://www.renatherapeutics.com/?lang=en>

About NIPPON SHOKUBAI CO., LTD.: Since 1941, Nippon Shokubai has grown up its business with unique catalyst technology. Nippon Shokubai has supplied, for example, ethylene oxide, acrylic acid, automobile catalysts, process catalysts and so on. Among all, our global market share of superabsorbent polymers is the largest in the world now (according to Nippon Shokubai research). Nippon Shokubai is a global chemical company operating under its corporate mission "TechnoAmenity-Providing affluence and comfort to people and society with our unique technology."

<https://www.shokubai.co.jp/en/>

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