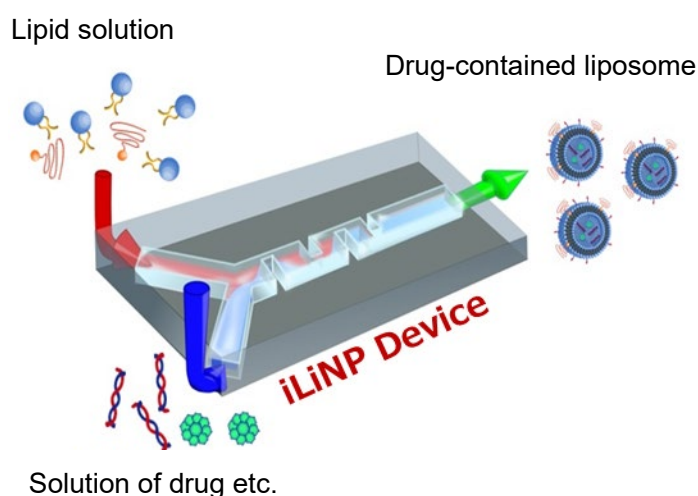


March 5th, 2019

Nippon Shokubai and Lilac Pharma Signed an Agreement on Business of Liposome Ingredients for Cosmetics

NIPPON SHOKUBAI CO., LTD. (Headquarter: Osaka Chuo-ku, President: Yujiro Goto, hereinafter “Nippon Shokubai”), and Lilac pharma Inc. (Headquarter: Hokkaido Sapporo-city Kita-ku, President: Motoki Susa, hereinafter “Lilac Pharma”), signed a joint development agreement on liposome[※] ingredients for cosmetics. Under this agreement, Nippon Shokubai will start marketing activities of the liposome ingredients developed by Lilac Pharma and cooperatively developed by both Nippon Shokubai and Lilac Pharma from April 1st of 2019 in the cosmetic area.

Nippon Shokubai and Lilac Pharma will start joint researches on application of high-quality liposome as the cosmetic ingredients and development of commercial-based production process of liposome for cosmetics by using micro flow device named iLiNPTM. iLiNPTM is a device of micro mixer developed by professor Manabu Tokeshi and assistant professor Masatoshi Maeki of Hokkaido University, Graduate School / Faculty of Engineering, and designed by Lilac Pharma based on their own technological theory. The device can successively produce favorite size of liposome with narrow-ranged size distribution by just flowing the raw materials into it. Owing to this technology to control the particle size highly, we are expecting that effectiveness will be penetrate to a target layer and keep them in the layer on human skin consist of epidermis (stratum corneum, stratum granulosum, stratum spinosum, basalis), dermis and hypodermis.



※Liposome

A liposome is a 20 - 200 nm spherical vesicle having at least one lipid bilayer. The liposomes can improve stability by internally sealing unstable materials.

Nippon Shokubai has set a target at cosmetic ingredients business as one of the new business target areas in the 2nd medium-term business plan, “Reborn Nippon Shokubai 2020 NEXT” started in 2017. Nippon Shokubai aims for early entry to the market with providing cosmetic ingredients to satisfy market needs.

1. Outline of Lilac Pharma

Name	Lilac pharma Inc.
Headquarter	Room #C, Hokkaido Collaboration Center (Collabo Hokkaido) Kita 21, Nishi 12, Kita-Ward, Sapporo, Hokkaido 001-0021, Japan
Representative	Motoki Susa
Business	1. Research and development of pharmaceutical and cosmetic products. 2. Licensing and trading intellectual properties. 3. Investigation and consultation pertaining to the research and development of pharmaceutical and cosmetic products.
Capital	14.1 million yen
Established	April 18th, 2016

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 polymer is the largest in the world now. Nippon Shokubai is a global chemical company operating under its corporate mission "Providing affluence and comfort to people and society with our unique technology." <http://www.shokubai.co.jp/en/>

【Contacts】 Investor & Public Relations Dept.
NIPPON SHOKUBAI CO., LTD.
TEL: +81-3-3506-7605 E-mail: shokubai@n.shokubai.co.jp