

OIST Seminar

DATE: Thursday, January 17th

TIME: 14:30 – 16:00

VENUE: B503

SPEAKER: **Hideki Tsujishita Ph.D.**

**TITLE: Structure-based Drug Design in Pharmaceutical Industry**

**Speaker’s Profile**

Hideki Tsujishita is Department Head of Discovery Chemistry in Pharmaceutical Research Division of Shionogi & Co., Ltd., a Japanese pharmaceutical company. He and his department are responsible for exploratory research in drug discovery process, including computational chemistry, structure biology (protein x-ray crystallography / NMR), and medicinal chemistry with structure-based drug design. He started his career in pharmaceutical industry in 1989 as a medicinal chemist. From 1991, he studied computational chemistry and computer-aided drug design under the direction of Prof. Shuichi Hirono at Kitasato Univ. and then moved into Bayer Research Center Japan in 1998. From 2003, he has been working in Shionogi.

**Abstract**

“Making a drug” is a long-term, cost-intensive, and risky process. According to a survey by Japan Pharmaceutical Manufacturers Association in 2009, the average time to make a drug is approximately 15 years, and its success rate is 1/21,677. For this reason, pharmaceutical industry has been seeking efficient ways for drug discovery. “Structure-based drug design (SBDD)” is one of such a way, where three-dimensional structures of “target” proteins are utilized to design small compounds that could complementarily bind to the target protein. In this seminar, successful examples as well as pitfalls of SBDD utilization in pharmaceutical industry will be presented and discussed. Recent progress in this field will be also shown.

**General Introduction by Tsuneaki Sakata, Ph.D.**

Head, Innovation Design Office, Global Development, Shionogi & Co., Ltd.

1979- Shionogi Research Laboratories

1999- Visiting Professor, Department of Biology, Graduate School of Science, Kobe University

2011- Visiting Professor, Graduate School of Engineering Science, Osaka University

I will explain about the R &D activities of Shionogi & Co., Ltd, headquartered in Osaka. Established in 1878, Shionogi has more than 130 years of history of providing pharmaceutical medicines. We have 6,010 consolidated and 4,262 non-consolidated employees. Our focused therapeutic areas are: 1) metabolic diseases, 2) pain relief, 3) anti-infectious diseases, and 4) frontier areas including neurologic diseases, allergies, and cancer vaccines. Shionogi seeks innovative technologies for drug development and novel drug candidates from all over the world.

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