S13-3 Construction of chemical library by utilizing the biosynthetic function of microorganisms

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Perturbing intracellular networks and observing the resulted phenotype is a superior tactics to understand the complex biological systems. Molecular biologists often use siRNA to knock down the aimed mRNA; on the other hand, chemical biologists use small molecules to inhibit the protein function. Since the small molecules are useful to investigate biological functions, we named these molecules "bioprobes" [1].

To find potent and specific bioprobes, the large scale chemical library is required. For the research of chemical biology as well as drug discovery, we constructed Natural Product Depository (NPDepo), RIKEN [2]. In this presentation, I will talk on our approach to make the chemical libraries with the aid of the pathway engineering of biosynthetic gene clusters of microorganisms.

1) Osada H. “Trends in bioprobe research.” *Bioprobes (Ed. H. Osada), Springer*, pp.1-14 (2000)

2) Tomiki T, Saito T, Ueki M, Konno H, Asaoka T, Suzuki R, Uramoto M, Kakeya H, Osada H. “RIKEN natural products encyclopedia.(RIKEN NPEdia), a chemical database of RIKEN natural products depository (RIKEN NPDepo).” *J. Comp. Aid. Chem.*, **7**, 157-162 (2006)