セミナーのお知らせ

"DNA-encoded chemistry technology: an effective and efficient approach to small molecule discovery in academia"

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Date: Jun 26th Friday
Time: 11 am to 12 pm
Location: Biken Hall, 1st Floor, Main building, Research Institute for Microbial Diseases (微研ホール、微生物病研究所 本館 1F)

Drug discovery and development is an astonishingly expensive, high-risk endeavor. The preclinical phase of small molecule drug discovery currently utilizes high-throughput screening (HTS) of curated collections of ~1M compounds, followed by extensive medicinal chemistry, and typically takes longer than 4 years and costs greater than $20 million for each compound moved to consideration for clinical evaluation. These costs are clearly untenable in academia, and increasingly unsustainable in industry. DNA–encoded chemistry technology (DEC-Tec) has emerged as an alternative technology for small molecule discovery that shortens the time frame and resolves the economic shortcomings of the HTS/ medicinal chemistry model. DEC-Tec addresses these issues by enabling the assembly and interrogation by selection from a mixture of billions of compounds resulting in the direct discovery of high-affinity drug-like ligands for disease targets. The talk will outline the science behind DEC-Tec, and illustrate the design, assembly and use of DNA-encoded libraries for small molecule discovery.

Reference:

1. Application of encoded library technology (ELT) to a protein-protein interaction target: discovery of a potent class of integrin lymphocyte function-associated antigen 1 (LFA-1) antagonists. Bioorg Med Chem 22, 2353-2365 (2014).
2. Design, synthesis and selection of DNA-encoded small-molecule libraries. Nat Chem Biol 5, 647-654 (2009).

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