

Combinatorial Mining of New Biosynthetic Pathways and Their Associated Natural Products

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Natural products are small molecules of incredible structural diversity that have long been appreciated for their critical role in drug discovery and development. Sequencing of numerous actinomycete genomes during the past decade has revealed a stunning number of biosynthetic gene clusters, only about 10% of which have been linked to characterized natural products. It is clear that our ability to mine these new gene clusters to uncover the chemical potential hidden within them has not kept pace with DNA sequencing technology. We herein choose a few examples from our current research, to show the practices to transform the potential genotypes into the practical chemotypes and the potential utilities of the lab findings in methodology development for mining new biosynthetic pathways and their corresponding products..

Organizer: GCOE Program Center for Medical System Innovation through Multidisciplinary Integration, the University of Tokyo

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