

Engineered Biosynthesis of Natural Products: Combinatorial Biosynthesis and Synthetic Biology

윤여준*

이화여자대학교

(joonyoon@ewha.ac.kr*)

We are mainly focusing on characterization of the biosynthetic pathway and creating the structural diversity of natural products including polyketides and aminoglycosides through the combinatorial biosynthesis and synthetic biology. Synthetic biology is a new area of biological research that combines science and engineering in order to design and build novel biological functions and systems. Combinatorial biosynthesis is one area of chemical biology for the generation of novel natural products. The basic concept of combinatorial biosynthesis is combining metabolic pathways in different organisms on a genetic level. The synthetic biological approaches combined with combinatorial biosynthesis will allow us “the biological total synthesis of natural products”, which will eventually lead to the unlimited structural diversification of natural product, drug discovery, and mass production. Some recent examples for this new synthetic chemical biology approaches will be presented.