

Development of microbial consortium to efficiently convert carbon monoxide to 3-hydroxypropionic acid

차상학, 임현규, 강채원, 이지훈, 정규열[†]

POSTECH

(gyjung@postech.ac.kr[†])

A large quantity of carbon monoxide is produced during incomplete combustion of organic compound in industry. Microbial processes have received much attention for its conversion to value-added biochemicals by utilizing the gas as a carbon source. However, difficulty in introducing both carbon monoxide assimilation pathway and value-added chemical production pathway into single microorganism has been a major bottleneck. In this study, a novel microbial consortium for efficient conversion of carbon monoxide to 3-hydroxypropionic acid (3-HP) was established by anaerobically co-cultivating *Eubacterium limosum* and recombinant *Escherichia coli*. As a result, we successfully produced 12 mg/L of 3-HP for 52 hrs from carbon monoxide through the microbial consortium.