

Metabolic engineering for the fermentative production of aromatic polyesters

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Escherichia coli strains developed in this study is able to produce aromatic polyesters from glucose through one-step fermentation. Here, *Clostridium difficile* isocaprenoyl-CoA:2-hydroxyisocaproate CoA-transferase and evolved polyhydroxyalkanoate synthase genes are expressed in a engineered D-phenyllactate-overproducer strain. Poly(3-hydroxybutyrate-co-D-phenyllactate) copolymers, with different molar compositions are produced through expression of *Cupriavidus necator* β -ketothiolase and reductase genes. This is the first attempt on the one-step fermentative production of aromatic polyesters from renewable resources. [This work was supported by the Intelligent Synthetic Biology Center through the Global Frontier Project (2011-0031963) and also by the Technology Development Program to Solve Climate Changes on Systems Metabolic Engineering for Biorefineries (NRF2012M1A2A2026556 and NRF-2012M1A2A2026557) from the Ministry of Science and ICT through the National Research Foundation of Korea.]