Biosynthesis of 2-hydroxybutyrate containing polyhydroxyalkanoates by recombinant *Ralstonia eutropha*

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Polyhydroxyalkanoates (PHAs) have been considered as promising environmentally friendly alternatives of petroleum-based polymers due to their material properties that are similar to those of chemically synthesized plastics. Since they can be easily modified by altering monomer compositions, much effort has been focused on the development of microbial platform to produce PHAs containing novel monomers. Biological synthesis of PHA is manly composed of two distinguished steps. Firstly, hydroxyacyl-CoAs which are the monomers of PHA are produced by natural or engineered microbial strains. Secondly, the PHA synthase, which is the key enzyme in PHA synthesis, accepts its specific monomers and then synthesize PHAs. Many microorganisms haven been reported to produce PHAs from renewable resources. Among those, here, we report recombinant Ralstonia eutropha strains expressing Clostridium propionicum propionyl-CoA transferase (PctCp) and Pseudomonas sp. 6-19 PHA synthase (PhaC1Ps6-19) genes that can produce 2-hydroxyacids-containing PHAs. Detailed results will be presented in this presentation.