Biological production of C5 platform chemicals for the synthesis of bio-based plastic and plasticizer

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Most platform chemicals used for the synthesis of plastics and plasticizers are currently produced from petroleum. Due to growing concerns over climate change, there have been tremendous efforts to produce platform chemicals from renewable resources such as biomass. Bio-based chemicals such as 1,3-propanediol, L-lactic acid, succinic acid, 1,4-butanediol have been successfully produced from glucose using natural or engineered microbial strains. In particular, C5 platform chemicals can be produced through metabolic engineering of L-lysine pathway In this talk, microbial production of C5 platform chemicals i.e., cadaverine and glutaric acid is performed to replace petroleum-based diamine or diacid. The synthesis of bioplastic and bioplasticizer using bio-based cadaverine and glutaric acid is demonstrated.