Mining natural and synthetic diversity towards sustainable methacrylate production

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Summary

Methyl methacrylate (MMA) is a petro-chemical derived building block for plastics, building materials, surface coatings and medical/dental implant materials. This project aimed to identify a candidate microorganism for technically feasible and economically viable MMA production from sustainable bio-based feedstocks.

Aims

- Demonstrate isolation of microbial strains with properties favourable for bio-based production of organic acids.
- Explore utility of these strains in identifying genetic variants with industrially favourable properties.
- Deliver strains with the potential for development towards industrial application.

Outcomes

- Generated diverse synthetic populations of microbes with varying properties and characteristics.
- Isolated and characterised strains that grew in organic acids at a higher concentration.
- Sequenced the genomes of improved strains to identify the genetic basis of improvements.

"The BBNET POC Award enabled us to generate new strains with improved properties for organic acid bioproduction that establishes a strong platform for further development"
Benjamin Blount, University of Nottingham

This proof-of-concept project was awarded by the Biomass Biorefinery Network and funded by BBSRC. For more information visit bbnet-nibb.co.uk.