MICROORGANISMS AND METHODS FOR PRODUCING CIS,CIS-MUCONIC ACID

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The Invention

UW-Madison researchers used metabolic engineering to generate recombinant microorganisms capable of producing the commodity chemical cis, cis-muconic acid (ccMA) from biomass-derived aromatics. The recombinant microorganisms contain one or more modifications, including native genetic mutations and/or insertion of exogenous genes. The result is microorganisms having increased flavin prenyltransferase activity, protocatechuate decarboxylase activity, and catechol 1,2-dioxygenase activity, along with other enzymatic modifications. When grown in aromatic (or phenolic) containing media – generally derived from renewable biomass sources – the recombinant microorganisms were able to generate stoichiometric amounts of ccMA. An exemplary species of microorganism for use with this invention, Novosphingobium aromaticivorans (DSM12444), has proven capable a capable chassis for the conversion of biomass-derived aromatics.

Additional Information

For More Information About the Inventors

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Publications

- Read a news story about this technology.

Tech Fields

- Clean Technology : Biobased & renewable chemicals & fuels

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854