Abstract

MICROBIAL CONVERSION OF OILS AND FATTY ACIDS TO HIGH-VALUE CHEMICALS

Microorganisms for the production of high-value chemicals from free fatty acids are provided. The microorganisms comprise genetic mutations that alter fatty acid metabolism. The genetic mutations include a mutation or deletion of a *fadR* gene in which the *fadR* enzyme activity is partially or substantially eliminated and a mutation in an *atoC* gene that provides overexpression of the microorganism's *ato* operon. Methods of using the microorganisms to produce high-value chemicals are also provided. The high-value chemicals include ethanol, methyl acetate, succinate, gamma-butyrolactone, 1,4-butanediol, acetone, isopropanol, butyrate, butanol, mevalonate, propionate, ethanolamine and 1,2-propanediol.

(Figure 1)