

Production of 2,4-dihydroxybutyrate from glucose via homoserine

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2,4-Dihydroxybutyrate(DHB) has diverse applications in the production of fine and specialty chemicals. This study aims to develop recombinant Escherichia coli W3110 for production of DHB from glucose via homoserine via two reactions; (i)conversion of homoserine to 2-oxo-4-hydroxybutiric acid(OHB), and (ii)reduction of OHB to 2,4-dihydroxybutyric acid [1]. To develop an efficient strain, screening and engineering of the enzymes for the two reactions were conducted. Seventeen transaminase and 10 dehydrogenases from various sources were tested and two best enzymes were selected. When E. coli W3110 was introduced by these two enzymes, production of DHB from glucose was confirmed.