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Enantioselective dihydroxylation of xanthorrhizol from Curcuma xanthorrhiza via biotransformation using Aspergillus Niger

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Abstract

Biotransformation is acknowledged as one of the green chemistry methods to synthesis various analogues for further valorization of natural product compounds chemistry and bioactivities. It has huge advantage over chemical synthesis due to its cost-efficiency and higher selectivity. In this work, a xanthorrhizol derivatives, namely (7 R,10S)-10,11-dihydro-10,11-dihydroxyxanthorrhizol was produced in 60% yield from the biotransformation process utilizing *A. niger*. The structure of the compound was established by extensive spectroscopic methods and comparison with literature data. This biotransformation successfully afforded enantioselective dihydroxylation reaction via green chemistry route. This is the first report on both biotransformation of xanthorrhizol and utilization of *A. niger* as its biocatalyst. © 2022 Informa UK Limited, trading as Taylor & Francis Group.

Author Keywords

Aspergillus niger; Biotransformation; dihydroxylation; enantioselective; green chemistry; xanthorrhizol

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