

Biotransformation of Ilicic Alcohol with *Aspergillus Niger*

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Abstract: 3 β -hidroxilic alcohol was obtained from of ilicic alcohol using cultures of *Aspergillus niger*.

Introduction

Sesquiterpenes are wide spread *Asteracea Compositae* family. Their derivatives present several biological activities. Among them we have studied their gastrointestinal citoprotective action and the antiinflammatory effects. The production of active metabolites by transformation of low funcionalized natural products is an attractive idea. In previous reports we have described the hydroxylation of the eudesmane, ilicic acid, in positions 1 β y 2 β [1] and the production of trihydroxyderivatives in positions 2 β y 3 α from kudtdiol [2] by *Cunningamella echinulata*.

Materials and methods

Culture Conditions: Modified Czapek broth [3] was used to carry out the biotransformation reactions. Agar Czapek was employed to maintain the strains. Taking into account a previous screening, we have chosen an *Aspergillus niger* strain, isolated from aerial parts of *Artemisia donglassiana*. Biotransformations were performed according to a two steps fermentation process.

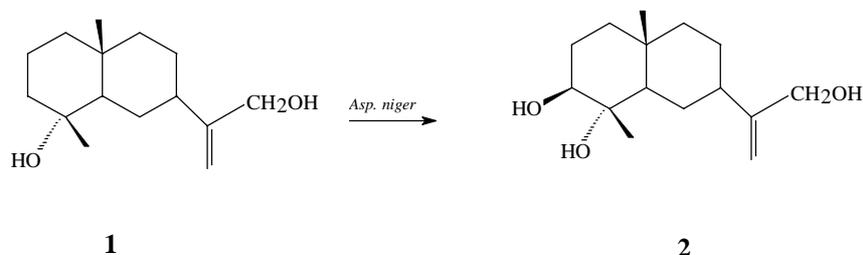
Biotransformation products were recover from the culture media by liquid-liquid extraction with Et₂O and purified by CC with a gradient of n-hexane/AcEt. 80mg of the biotransformation product were obtained. The hydroxylation position was defined by NMR and MS analysis.

Results and Discusion

The comparison of the ¹H NMR spectrums in CCl₃D of the new product versus the ones of the substrate suggested us that the hydroxylation position was 3 β . The sing at δ 3.43 ppm was attributable to a geminal hydrogen in α -equatorial conformation. This proposal was confirmed through the coupling pattern (J=11.5 y 4.5 Hz). ¹H-NMR shifts are in accordance with the ones recently reported for 3 β -hydroxylic acid isolated from other sources [4]. The impossibility to obtain the acetonic derivative

confirm that the hydroxylic group was introduced in position in C-3, *trans* respect to the hydroxylic group in C-4.

It was recently reported that *Cunninghamella echinulata* NRRL 3655 hydroxylated both, ilicic acid and kudtdiol in positions C-1 β , C-2 β y C-3 α . These results, together with the ones reported here, shown us the ability of these microorganisms to hydroxylate in positions *cis* respect to the methyl groups in C-4 y C-10



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References and Notes

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