Microbial transformations of isocupressic acid.

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Abstract

Microbial transformations of the labdane-diterpene isocupressic acid (1) with different microorganisms yielded several oxygenated metabolites that were isolated and characterized by MS and NMR spectroscopic analyses. Nocardia aurantia (ATCC 12674) catalyzed the cleavage of the 13,14-double bond to yield a new nor-labdane metabolite, 2. Cunninghamella elegans (-) (NRRL 1393) gave 7beta-hydroxyisocupressic (3) acid labda-7,13(E)-diene-6beta,15, and 17-triol-19-oic acid (4), Mucor (ATCC 20094) and mucedo gave 2alpha-hydroxyisocupressic acid (5) and labda-8(17),14-diene-2alpha, 13-diol-19-oic acid (6).