

Hydroxylation and glucosidation of ent-16beta-hydroxybeyeran-19-oic acid by *Bacillus megaterium* and *Aspergillus niger*

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Abstract

ent-16beta-Hydroxybeyeran-19-oic acid (1) has potential antihypertensive activity. To obtain novel and more-effective compounds, 1 was incubated with *Bacillus megaterium* ATCC 14 581 and *Aspergillus niger* CCRC 32 720. The structures of the metabolites were determined by HR-FAB-MS, 1D- and 2D-NMR spectral data, and enzymatic hydrolysis. *Bacillus megaterium* hydroxylated and glucosidated 1 to yield ent-7alpha,16beta-dihydroxybeyeran-19-oic acid (2), ent-16beta-hydroxybeyeran-19-oic acid alpha- D-glucopyranosyl ester (3), and ent-7alpha,16beta-dihydroxybeyeran-19-oic acid alpha- D-glucopyranosyl ester (4). *Aspergillus niger* hydroxylated 1 to yield ent-1beta,7alpha,16beta-trihydroxybeyeran-19-oic acid (5) and ent-1beta,7alpha-dihydroxy-16-oxobeyeran-19-oic acid (6). Metabolites 3 - 5 were characterized as new compounds. In addition, 2, 3, 5, and 6 were tested for antihypertensive effects, and we found that 5 and 6 were more potent than the parent compound 1.