

# Transformation of Steviol-16 $\alpha$ ,17-epoxide by *Streptomyces griseus* and *Cunninghamella bainieri*.

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## Abstract

Eight new ent-beyerane metabolites, 5-8, 12, and 14-16, and four new ent-kaurane metabolites, 3, 10, 11, and 13, together with two known metabolites, 4 and 9, were isolated from the microbial transformations of steviol-16 $\alpha$ ,17-epoxide using *Streptomyces griseus* ATCC 10137 and *Cunninghamella bainieri* ATCC 9244. The structures of the metabolites were characterized by IR, HRFABMS, and 1D and 2D NMR data. In addition, a GRE (glucocorticoid response element)-mediated luciferase reporter assay was used to initially screen for the biological activity of the 11 metabolites and stevioside. Steviol (1), steviol-16 $\alpha$ ,17-epoxide (2), ent-11 $\alpha$ ,13,16 $\alpha$ ,17-tetrahydroxykauran-19-oic acid (3), ent-17-hydroxy-16-ketobeyeran-19-oic acid (4), ent-9 $\alpha$ ,13-dihydroxy-16 $\beta$ ,17-epoxykauran-19-oic acid (10), ent-9 $\alpha$ ,17-dihydroxy-16-ketobeyeran-19-oic acid (12), ent-1 $\beta$ ,17-dihydroxy-16-ketobeyeran-19-oic acid (14), and stevioside showed significant effects; in particular, stevioside showed almost equal potency as dexamethasone.