

Herpetopanone, a diterpene from *Herpetosiphon aurantiacus* discovered by isotope labeling.

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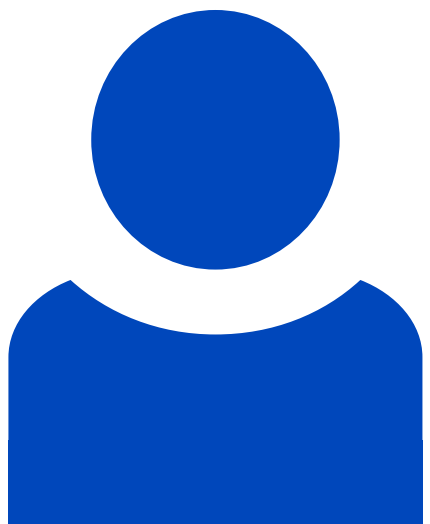
Abstract

The genome of the predatory bacterium *Herpetosiphon aurantiacus* 114-95T harbors a number of biosynthesis genes, including fourterpene cyclase genes. To identify the terpenes biosynthesized from *H. aurantiacus* 114-95T, we fed the strain with ^{13}C -labeled glucose and, subsequently, searched for characteristic mass shifts in its metabolome. This approach led to the discovery of a new natural product, of which the isotope pattern is indicative for a diterpene originating from the methylerythritol phosphate pathway. After large-scale fermentation of *H. aurantiacus* 114-95T, the putative diterpene was isolated in sufficient quantity to enable NMR-based structure elucidation. The compound, for which the name herpetopanone is proposed, features a rare octahydro-1H-indenyl skeleton. Herpetopanone bears resemblance to cadinane-type sesquiterpenes from plants, but is structurally entirely unprecedented in bacteria. Based on its molecular architecture, a possible biosynthetic pathway is postulated.

Involved units

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