Metabolism of goniothalamin in animal and microbial system

ABSTRACT

Of the twenty microorganisms screened for metabolism of goniothalamin only Streptomyces aurofaciens ATCC 10762 and Nocardia species NRRL 5646 produced two metabolites, 3,4-dihydrogoniothalamin and 3,4,7,8 tetrahydrogoniothalamin. The identity of the isolated metabolites were established using TLC, HPLC, MS, IR, and 1H- and 13C-NMR spectroscopy. In addition, the substrate had been transformed into two unknown metabolites by Aspergillus niger ATCC 11394 and Septomyxa affinis ATCC 6737 in low yield. Three of the metabolites were also detected and identified in the urine and blood samples of the goniothalamin-treated Sprague-Dawley rats. The obtained results are in agreement with and support the principle of microbial models of mammalian metabolism.

Keyword: Biotransformation; Goniothalamin; Goniothalamus spp.; Metabolites; Sprague-Dawley rat