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8,9-Methylenedioxybenzo[*j*]phenanthridines: Topoisomerase I-Targeting activity and cytotoxicity

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Abstract

Substituted benzo[*j*]phenanthridines that have incorporated within their structure an 8,9-methylenedioxy group can exhibit topoisomerase I-targeting activity. Structure–activity studies were performed to examine the influence of saturation at the 11,12-positions of several substituted 8,9-methylenedioxybenzo[*j*]phenanthridines. The activities of these dihydro analogues were compared to those of their unsaturated analogues. In addition, the influence of varying substituents at the 2- and 3-positions within the A-ring of these 8,9-methylenedioxybenzo[*j*]phenanthridines on their relative potency as topoisomerase I-targeting agents and cell proliferation as determined using the MTT assay was investigated. 2,3-Dimethoxy-8,9-methylenedioxybenzo[*j*]phenanthridine and its 11,12-

dihydro derivative were among the more potent analogues evaluated with regard to topoisomerase I-targeting activity and cytotoxicity.