Total Syntheses of Novel Cytocidal β-Carboline Alkaloids, Oxopropalines D and G

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ABSTRACT: A new type of β-carboline nucleus, N-methoxymethyl-4-methyl-β-carboline was synthesized by thermal electrocyclic reaction of a 1-azahexatriene system, involving the indole 2,3-bond. The required β-carboline nucleus was prepared in a four-step sequence starting from 2-formyl-3-iodoindole. The total synthesis of oxopropaline G was achieved from this key compound in four steps. Furthermore, the enantioselective total synthesis of (+)-oxopropaline D and its enantiomer were also completed by application of the Sharpless dihydroxylation in nine steps from the same key compound.

抄録 ラベンダマイシン産生のStreptomyces sp. G324から、1993年阿部らにより単離・構造決定された抗腫瘍性の新規1,4-ジ置換β-カルボリン構造のオキソプロパリンGの最初の全合成、また(+)-オキソプロパリンDおよびそのエナンチオマーの最初のエナンチオ選択的全合成を達成した。

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