

E2-24: Novel synthesis of Rutagravin

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Rutagravin (I) is an alkaloid isolated from the callus cultures of *Ruta graveolens* (Rutaceae). This compound represents a new class of acridone alkaloid with difuranoid moiety. Since Rutagravin showed antimicrobial activity, continuing studies on acridone alkaloids, synthesis of (I) was undertaken.

Rutacridone (II), a naturally occurring alkaloid from *Ruta graveolens*, was selected as starting material. Treatment of rutacridone in acetone with an aqueous solution of potassium permanganate at room temperature led to an oxidation of (II) followed by a ring closure to give (I) as the major product and its enantiomer. Vicinal diol, gravacridondiol (III), which is also a naturally occurring alkaloid from the same plant, and dihydrohallacridone (IV) which was converted to hallacridone (V) by treatment with 2,3-dichloro-5,6-dicyano-1,4-benzoquinone (DDQ) in benzene, were obtained as by-products.

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