

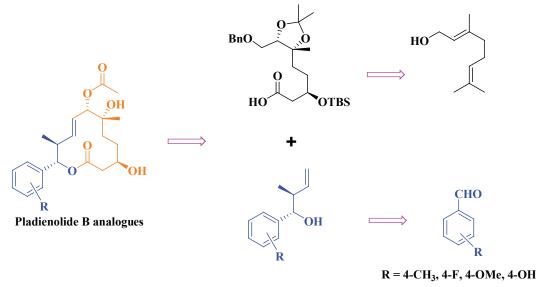
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Synthesis and biological evolution of pladienolide B analogues

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Pladienolides A to G, novel 12-membered macrolides were isolated from Streptomyces platensis Mer-11107, with pladienolide B the most potently inhibiting hypoxia induced-VEGF expression and proliferation of the U251 cancer cell line. A growth inhibitory study using a 39-cell line drug-screening panel demonstrated that pladienolide B has strong antitumor activities in vitro. It has a unique antitumor spectrum that sets it apart from anticancer drugs currently in clinical use. Pladienolide B has a novel mechanism of action. Pladienolide B extensively inhibits tumor growth in xenograft models. In the most sensitive model, using BSY-1 xenografts, tumors were completely regressed by administration of Pladienolide B. For the reason of their novel mechanism of action and excellent in vivo efficacy, pladienolides appear to have major potential for use in cancer treatment. Here in we are reporting the synthetic path way and synthesis of Pladienolide B analogues which are undergoing for biological evaluation to establish lead molecules.



Scheme: Retrosynthesis of Pladienolide B analogues.

Biography

Praveen Kumar. Vemula obtained his Masters in Chemistry in the year 2006 from Osmania University with FIRST rank. He specializes in synthesis of Natural products and bio-active small molecules. He is a Senior Research Fellow under CSIR and presently he is a researcher in the field of Natural products synthesis with Indian Institute of Chemical Technology Hyderabad. He has two research articles published in peer reviewed journals and he has attended six national and international conferences.

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