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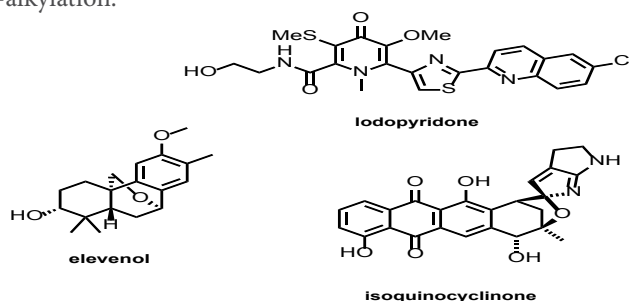


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Studies in natural product synthesis: Elevenol, lodopyridone and isoquinocyclinone

Elevenol isolated from the roots of *Flueggea virosa* is a 7,-20-oxa-bridged dinorditerpene that exhibits anti-Hepatitis C virus activity. Lodopyridone an unprecedented pentasubstituted 4-pyridone comes from the marine bacterial strain CNQ490 which was collected near the La Jolla Canyon. Isoquinocyclinone is the common aglycone of isoquinocycline A and B. Both natural products belong to the quinocyclines, a class of anthracycline natural products with antimicrobial and cytotoxic compounds which were isolated first from *Streptomyces aureofaciens*. Here we present progress towards the total syntheses of these natural products. Key steps for the synthesis of elevenol are a stereoselective Stetter-type Michael addition, a Tishchenko reaction, and an intra-molecular lactone enolate arylation. For lodopyridone a pentasubstituted 4-pyridone is prepared from kojic acid via a regioselective bromination, a thio-Ullmann reaction and a regioselective lithiation/iodination. The anthraquinone core of isoquinocyclinone is synthesized by a Hauser annulation. The 2,4,5,6-tetrahydropyrrolo[2,3-b]pyrrole substructure can be prepared via a Ni(0)mediated cyanide addition followed by the conversion of an O,O into an N,O acetal and an intra-molecular N-alkylation.



Biography

Ulrich Koert has done his studies in Chemistry from Frankfurt University, where he got his PhD in 1988. After his Post-doctoral studies from Strasbourg (1988-90), he moved to the Philipps University, where he finished his Habilitation in 1994. In 1996, he moved to München at the LMU as Professor for Organic Chemistry. From 1996 until 2001, he was a Professor for Organic and Bio-organic Chemistry at the Humboldt University in Berlin. Since 2001, he is a Professor for Organic Chemistry at the Philipps University Marburg in Germany. His research interest includes multistep synthesis of complex target molecules, stereoselective synthesis, natural products and functional molecules (ion channels, switches and semiconductor surfaces).

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