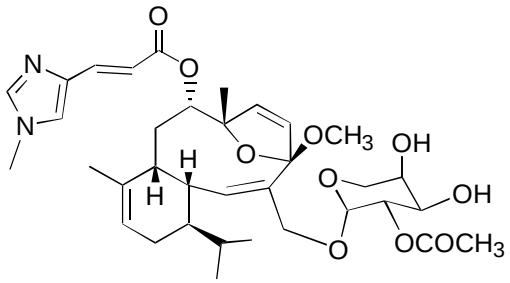
Cyclisation of Diterpene Alcohol Epiisocembrol. Attempts Towards Synthesis of Eleutherobin Analogs

Alexander V. Shpatov and Victor A. Raldugin

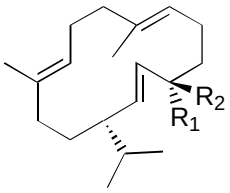
Novosibirsk Institute of Organic Chemistry, Siberian Branch of the Russian Academy of Sciences,
Acad. Lavrentyev Ave. 9, 630090 Novosibirsk, Russia.
Fax:+7 (383 2) 344 752. E-mail: shpatov@nioch.nsc.ru

A recently found in soft corals compound, eleutherobin **1,** was shown to possess a significant cytotoxic activity that is comparable to that of the known anticancer drug paclitaxel (Taxol). The main part of the eleutherobin molecule is a diterpene core with eunicellane carbon skeleton. Eunicellane derivatives are proposed to be formed via intramolecular cyclisations of cembrane precursors.

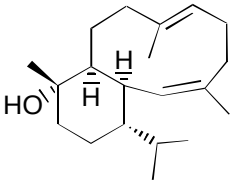


1

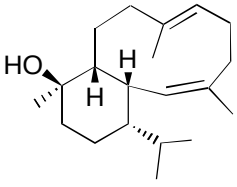
We have found that interaction of epiisocembrol **2** with 85% aq. formic acid results in mixture of hydrocarbons, formates, and corresponding alcohols. Reduction of the formates by lithium aluminium hydride gives eunicellane alcohols **3**, **4** and a tricyclic alcohol as the main products. The results obtained differ from those for cyclisation of isocembrol **5** under the same conditions. In the latter case cyclisation results in eunicellane derivatives **3, 4** in lower yields.



2, R_1=OH, R_2=Me
5, R_1=Me, R_2=OH



3



4