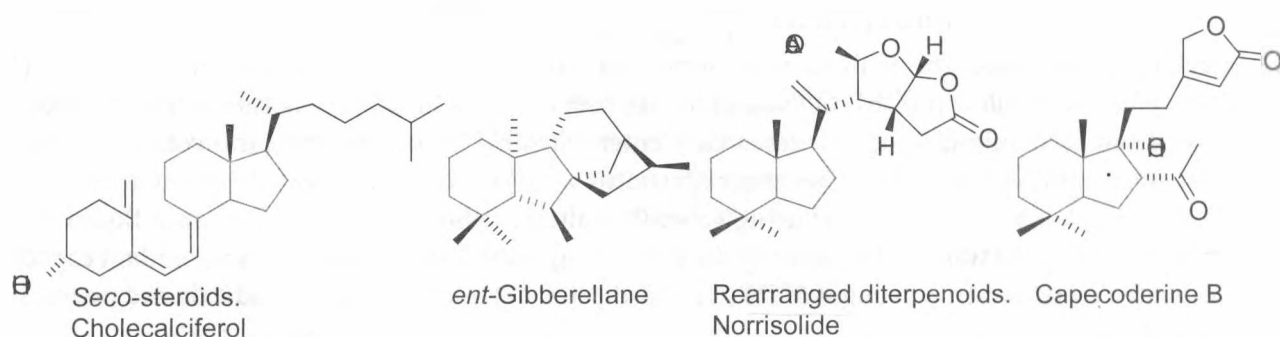


ELABORATION OF NEW METHODS FOR THE SYNTHESIS OF PERHYDRINDANIC COMPOUNDS WITH RELEVANT BIOLOGICAL ACTIVITY

Bolocan Vladimir, Harghel Petru

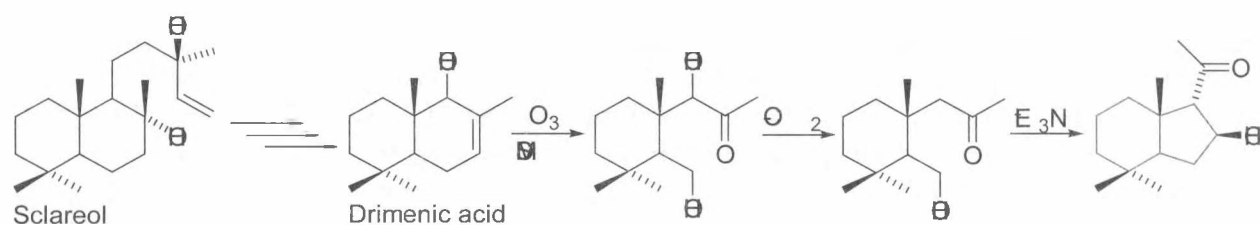
Academic adviser: Kulcitski Veaceslav, M.D., Ph.D., Professor, Institute of Chemistry, Academy of Sciences of the Republic of Moldova

Introduction: Perhydrindanes represents a common motif in natural sources. The number of representatives isolated from the plants and other natural sources is in growth. The well know compounds like seco-steroids, gibberellines have incorporated into their structure the perhydrindanic unit.



Methods and results: In recent years other terpenic perhydrindanes have been identified both in plants and in marine organisms. In particular, the biologically active Norrisolide was isolated from the nudibranch *Cromodoris norrisi*. Chapecoderin B and C have been found in the leaves of the Brazillian medicinal plant *Echinodorus macrophyllus*. They showed cytotoxicity against murine lymphoma L 1210 cell with IC_{50} value of 7.2 and 6.0 $\mu\text{g/ml}$.

Taking into consideration the active investigations in this field and provided problem of extraction of this compounds from the natural sources, where their quantity is not so large, a chemical synthesis of perhydrindanic framework has been suggested. Sclareol is used as initial substrate. It was subjected to oxidative degradation to obtain drimenic acid, that is the key substrate for the final stage of the synthesis. This one represents „One pot synthesis”, including ozonization of drimenic acid, decomposition of ozonides with DMS and cyclization of the last compound under the influence of one base to obtain perhydrindanic skeleton.



The full set of analytical tools was used for structure elucidation of reaction intermediates and final products, including NMR spectroscopy, GS-MS, TLC, column chromatography. The obtained perhydrindane can be used for following SAR studies, as well as starting material for other relevant compounds. The synthetic scheme was optimized and can be used on preparative scale.