BOS 2012 TALLINN

International Conference on Organic Synthesis

July 1-4, 2012
Tallinn, Estonia

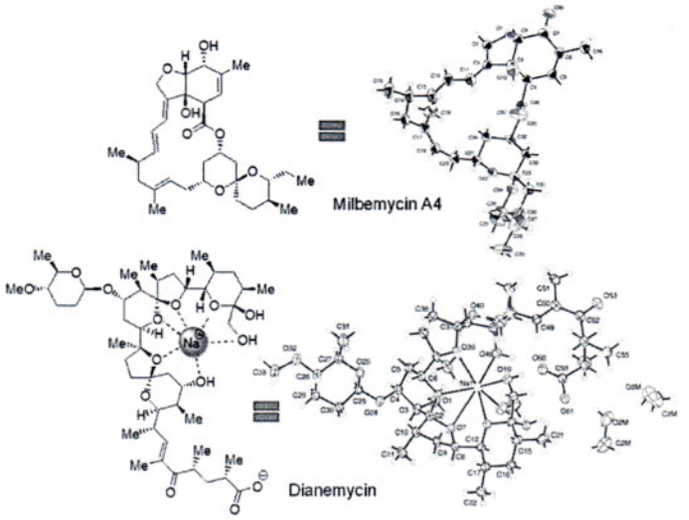
Balticum Organicum Syntheticum

Program and Abstracts

ISOLATION AND X-RAY STUDIES OF MILBEMYCINS A3/A4 AND DIANEMYCIN

Belyakov, S.[1]; Bizdēna, Ē.[2]; Kumpiņš, V.[2]; Jure, M.[2]; Grīnšteine, I.[2]; Turks, M.[2]*
[1]Aizkraukles Str. 21, Riga, LV-1006
Latvian Institute of Organic Synthesis, Latvia
[2]Azenes Str. 14/24, Riga, LV-1007
Faculty of Material Science and Applied Chemistry, Riga Technical University, Latvia
maris_turks@ktf.rtu.lv

Microorganisms such as bacteria, fungi, and algae produce a plethora of polyketide natural products. Strain of *Streptomyces milbemycinius* NRRL 5739 is known for production of several antibacterial and antiparasitic substances or their precursors. We have isolated from the aforementioned strain milbemycins A4 and A3. The latter are active substances of well known miticide *Milbeknock* and the key starting materials for the semi-synthesis of milbemycin oxime, a prominent antihelminthic drug. For the first time these important natural products are fully characterized by X-ray diffraction analysis. We have also unexpectedly isolated and re-characterized natural product Dianemycin[1] which is known since 1970-ties; however, its previous X-ray studies were not based on crystals with excellent quality. Dianemycin belongs to the class of carboxyl ionophores that complex the first row metal cations and therefore affect the transport of these latter in mitochondria. This property results in outstanding activity against chloroquine-resistant forms of malaria.



1. Kumpiņš, V.; Belyakov, S.; Bizdēna, Ē.; Turks, M. *Z. Kristallogr. NCS* **2012**, in press.

This work was supported by ERS Fund project 2010/0278/2DP/2.1.1.1.0/10/APIA/VIAA/045.