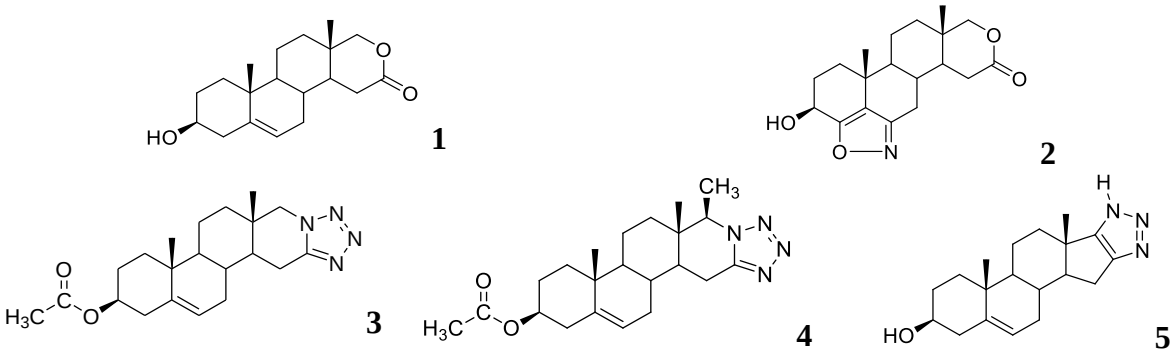
ENVIRONMENTALLY FRIENDLY SYNTHESIS OF PHARMACOLOGICALLY ACTIVE HETEROCYCLIC ANDROSTANE DERIVATIVES

Aleksandar Oklješa[1], Andrea Nikolić[1], Marina Savić[1], Marija Sakač[1], Suzana Jovanović-Šanta[1] Bianka Edina Herman[2], János Gardi[2], Katarina Penov Gaši[1], Ksenija Pavlović[1], Mihály Szécsi[2]

[1] *University of Novi Sad Faculty of Sciences, Department of Chemistry, Biochemistry and Environmental protection, Trg Dositeja Obradovića 3, 21000 Novi Sad, Serbia,*
[2] *First Department of Medicine, University of Szeged, Korányi fasor 8-10 H-6720 Szeged, Hungary* aleksandar.okljesa@dh.uns.ac.rs

Environmentally friendly synthetic approach of new potential drugs is of great importance in today's medicinal chemistry. Recent trends in organic synthesis utilize non-conventional green techniques such as ultrasound, microwave irradiation or using ionic liquids. In this work microwave (MW) assisted reactions were performed as rapid and eco-friendly procedures for the synthesis of androstane compounds possessing D-homo lactone or D-ring fused azole moieties (**1**–**5**). Effect of the synthesized compounds exerted on a key enzyme of the steroid hormone biosynthesis was investigated *in vitro* [1]. Compound **5** bearing 3-hydroxyl function and triazole moiety fused to D-ring inhibited the 17α-hydroxylase-$C_{17,20}$-lyase enzyme considerably (IC_{50}= 27±7 μM). Our results may be applied in the development of pharmacones to be used potentially in the pharmacotherapy of tumors of male and female reproductive tissues.



Acknowledgements
The authors thank the Ministry of Education, Science and Technological Development of the Republic of Serbia (grant No.172021)

[1]. N. Szabó, J. Ajduković, E. Djurendić, M. Sakač, I. Ignáth, J. Gardi, G. Mahmoud, O. Klisurić, S. Jovanović-Šanta, K. Penov Gaši, M. Szécsi, Acta Biol Hung 66 (2015) 41.