

XXII International Conference on Organic Synthesis

16-21 September 2018, Florence, Italy



SCIENTIFIC PROGRAM & ABSTRACT BOOK

<http://www.22-icos-florence.it/>

Synthesis and Photophysical Properties of *N*(9)-Alkylated Purines with Amorphousing Groups

Armands Sebris^a, Zigfrīds Kapilinskis^a, Irina Novosjolova^a, Kaspars Traksoviskis^a, Aivars Vembris^b, Māris Turks^a

^a Faculty of Materials Science and Applied Chemistry, Riga Technical University, P. Valdena str. 3, Riga, LV-1048, Latvia, ^b Institute of Solid State Physics, University of Latvia, Kengaraga str. 8, Riga, LV-1063, Latvia; e-mail: armands.sebris_1@rtu.lv

Earlier we reported the synthesis of fluorescent 6-triazolyl purine nucleosides [1]. Now we have developed the synthesis of 2/6-triazolyl purine derivatives with amorphousing groups at *N*(9) position. Different electron-donor and electron-acceptor groups were introduced in the purine structure and their modulating influence on fluorescent properties was studied.

Both variations of target compounds **5** and **9** were achieved by S_NAr reaction on diazides **3** and **6** proceeding in different positions, followed up by a CuAAC reaction. Trityl groups connected through short alkyl chain linkers provided target compounds **5** and **9** with the desired amorphous properties [2]. Compounds **5** with longer polyethylene glycol linkers were also studied. Final products have been obtained with 13–54% total yield. The fluorescent properties were studied in the solution and in the film, with compounds **5** emitting light at wavelength around 450 nm and compounds **9** emitting at around 400 nm. Quantum yields in DCM solution reached up to 91%. Compounds **5** and **9** had quantum yields up to 59% in the films.

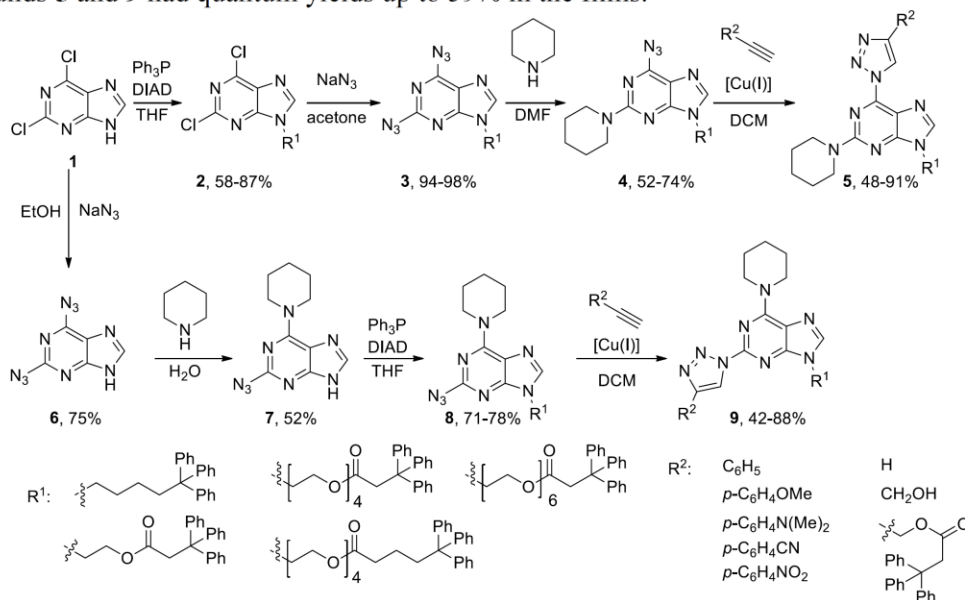


Fig. 1 General scheme for 2/6-amino-6/2-triazolyl purine derivatives

Acknowledgements:

This work was supported by ERDF project Nr. 1.1.1.1/16/A/131.

References: 1. Kovaļovs, A.; Novosjolova, I.; Bizdēna, Ē.; Bižāne, I.; Skardziute, L.; Kazlauskas, K.; Jursenas, S.; Turks, M. *Tetrahedron Lett.* **2013**, 54, 850. 2. Traskovskis, K.; Mihailovs, I.; Tokmakovs, A.; Kokars, V.; Rutkis, M. *Proceedings of SPIE*, **2012**, 8434: Nonlinear Optics and Applications VI, 1.