

M-26

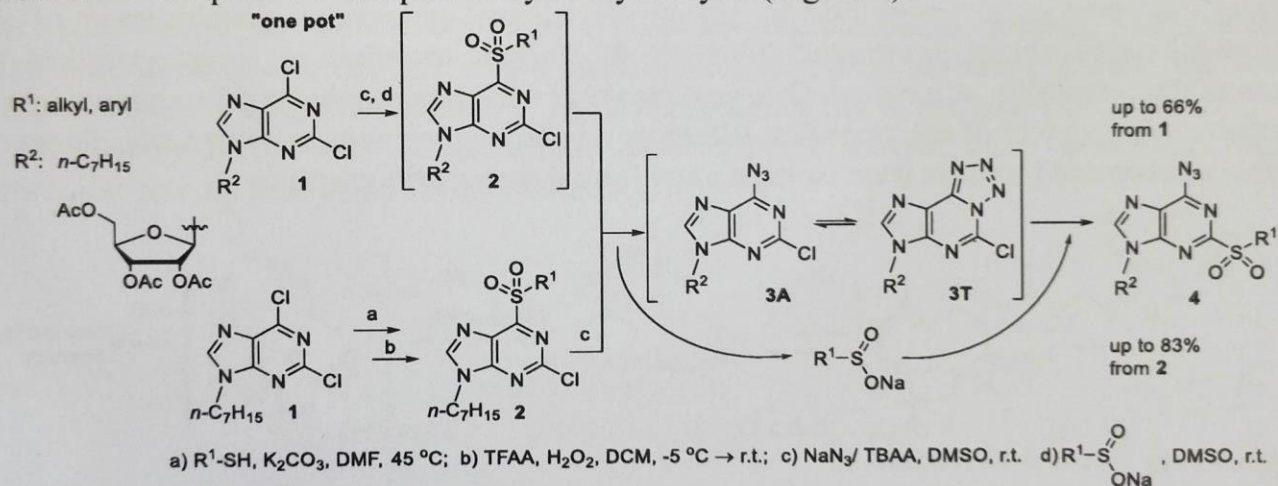
# The use of sulfonyl group dance in synthesis of 6-azido-2-sulfonyl purine derivatives

Jānis Miķelis Zāķis, Kristers Ozols

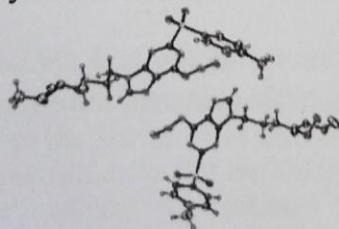
Faculty of Materials Science and Applied Chemistry, Riga Technical University

E-mail: Janis-mikelis.zakis@rtu.lv

Purine derivatives continue to be widely researched for their application in medicinal chemistry. For example, to treat tuberculosis, cancer and other malignancies.<sup>1,2</sup> Here we report a new approach for synthesis of 6-azido-2-sulfonyl purine derivatives (Scheme 1). The transformation from **2** to **4** can be explained by azido-tetrazolo tautomerism. The latter activates purine cycle towards S<sub>N</sub>Ar reaction at otherwise less reactive C2. Optimal reaction conditions were found - NaN<sub>3</sub>, DMSO, room temperature, and reaction scope was investigated using different sulfonyl purine derivatives **2**. A straightforward synthetic approach was developed using "one pot" reaction. First, sodium sulfinate salts were used to generate intermediate **2** *in situ*. After that, azide was added to the solution giving target product **4**. Structure of compound **4** was proved by X-ray analysis (Figure 1).



**Scheme 1.** Synthetic route to 6-azido-2-sulfonyl purine derivatives **4**.



**Figure 1.** X-ray structure of 6-azido-2-tosyl-9-heptyl-9H-purine.

Supervisors: Dr. chem. M. Turks, Dr. chem. I. Novosjolova

## Acknowledgements.

This work was supported by the Latvian Council of Science grant No LZP-2018/2-0037. Dr. phys. Anatolijs Mišņevs for X-Ray analysis.

## References

1. Sahasranaman, S.; Howard D.; Roy S. *Eur. J. Clin. Pharmacol.* **2008**, 64, 753.
2. Gruzdev, D. A.; Musiyak, V. V.; Levit, G. L.; Krasnov, V. P.; Charushin, V. N. *Russ. Chem. Rev.* **2018**, 87 (6), 604.