

# 8<sup>th</sup> Biennial International Conference on Organic Synthesis

Balticum Organicum Syntheticum  
July 6-9, 2014, Vilnius

**Program and Abstract Book**

**bos**  
2014  
vilnius

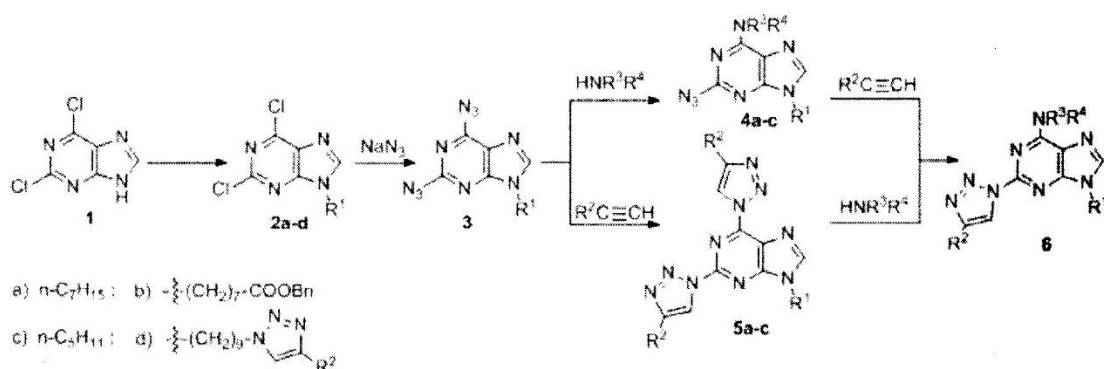


## SYNTHESIS OF NEW PUSH-PULL PURINES FROM 9-ALKYL SUBSTITUTED 2,6-DICHLOROPURINES

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Push-pull purine derivatives are attractive as sensors and reporters for biological applications. Recently the fluorescent purines as materials for electronic devices have also been developed.<sup>1</sup> We have reported that *N*<sup>6</sup>-substituted 2-triazolyl-adenine nucleosides exhibit strong fluorescence with emission maxima around 400 nm and quantum yields up to 53%.<sup>2</sup> The aim of this research was to synthesize C(9) alkylated purines with electron donor at C(6) and 4-substituted 1,2,3-triazol-1-yl group as acceptor at C(2). Target products **6** are obtained in four-step synthesis. Alkylation of **1** with a long chain alkyl halogenide or tosyl ester in the presence of NaH provided **2a-d**. A nucleophilic substitution with NaN<sub>3</sub> gave diazide **3**. Further, two synthetic routs toward **6** were developed: 1) nucleophilic substitution of azido group with amine at C(6), followed by a *click* reaction of **4** with terminal alkynes and 2) *click* reaction of diazide **3** to afford bis-triazolylpurines **5**, followed by S<sub>N</sub>Ar reaction on C(6)-triazolyl group with amine. *Click* reactions with terminal alkynes proceeded in DMF at 60-90 °C using CuSO<sub>4</sub>·5H<sub>2</sub>O and sodium ascorbate as catalyst generating system. The overall yields (**1**→**6**) are 20-35% in 4 steps.



1. Yang, Y.; Cohn, P.; Dyer, A.L.; Eom, S-H.; Reynolds, J.R.; Astellano, R.K.; Xue, J. *Chem. Mater.* **2010**, *22*, 3580-3582.
2. Kovaļovs, A.; Novosjolova, I.; Bizdēna, Ē.; Bižāne, I.; Skardziute, L.; Kazlauskas, K.; Jursenas, S.; Turks, M. *Tetrahedron Lett.* **2013**, *54*, 850-853.