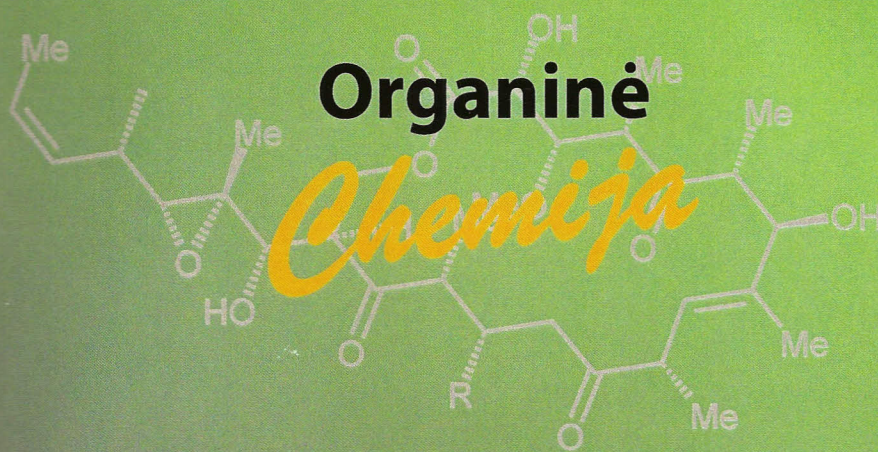


Kauno technologijos universitetas,
2013 m. balandžio 24 d.



Mokslinės konferencijos
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TURINYS

Redakcinė kolegija:

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Rita Vaickelionienė

*Isteigta prof. S. Kutkevičiaus premija
 už geriausią doktoranto darbą.
 Premijos steigėjai – prof. S. Kutkevičiaus dukra ir sūnus.*

Straipsnių kalba netaisyta

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SYNTHESIS AND APPLICATIONS OF 3-C-NITROMETHYL DERIVATIVES OF HEXAFURANOSES

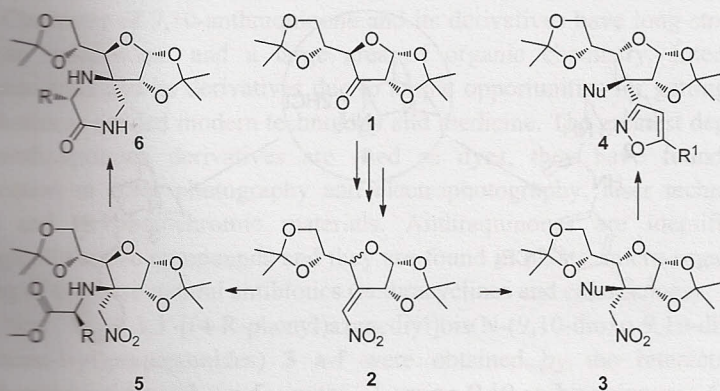
K. Vēze, D. Vasiljevs, J. Lugiņina, M. Turks

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Herein we report the synthesis of C(3) modified hexafuranoses with *gluco*-, *galacto*- and *gulo*- configurations. Transformations were carried out through nucleophilic addition to corresponding Michael acceptor of type **2**.

Diacetone-D-glucose derived ketone **1** was used as the starting material for synthesis of Michael acceptor **2**.

Addition of various *N*-, *S*- and *O*-nucleophiles to nitromethylene derivative with (4*S*)-configuration gave adducts of type **3** [1] which were subsequently transformed into isoxazole containing compounds **4** using *in situ* generated nitrile oxide and terminal alkyne 1,3-dipolar cycloaddition reaction.



On the other hand, aza-Michael addition of L-amino acid esters to the corresponding nitromethylene derivative with (4*R*)-configuration gave intermediates **5**. The latter yielded piperazone ring containing spiro-compounds **6** during catalytic hydrogenation over Pd/C.

Reference

J. Lugiņina, J.; Rjabovs, V.; Belyakov, S.; Turks, M. *Carbohydr. Res.* **2012**, *358*, 86.