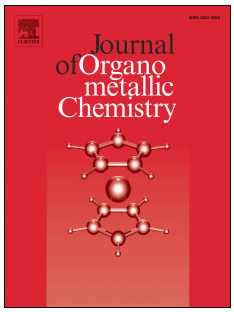
Accepted Manuscript



Cascade regio- and stereoselective reactions of 2-bromomethyl-1,3-thiaselenole with water and ethylene glycol: En roote to the first representatives of polyfunctional 2,3-dihydro-1,4-thiaselenines

Svetlana V. Amosova, Yulia I. Rykunova, Andrey S. Filippov, Maxim V. Penzik, Nataliya A. Makhaeva, Alexander I. Albanov, Vladimir A. Potapov

PII: S0022-328X(18)30208-0

DOI: 10.1016/j.jorganchem.2018.03.037

Reference: JOM 20387

To appear in: *Journal of Organometallic Chemistry*

Received Date: 24 February 2018

Revised Date: 23 March 2018

Accepted Date: 24 March 2018

Please cite this article as: S.V. Amosova, Y.I. Rykunova, A.S. Filippov, M.V. Penzik, N.A. Makhaeva, A.I. Albanov, V.A. Potapov, Cascade regio- and stereoselective reactions of 2-bromomethyl-1,3-thiaselenole with water and ethylene glycol: En roote to the first representatives of polyfunctional 2,3-dihydro-1,4-thiaselenines, *Journal of Organometallic Chemistry* (2018), doi: 10.1016/j.jorganchem.2018.03.037.

Dedicated to Prof. Irina P. Beletskaya on the occasion of her anniversary

Cascade regio- and stereoselective reactions of 2-bromomethyl-1,3-thiaselenole with water and ethylene glycol: en roote to the first representatives of polyfunctional 2,3-dihydro-1,4-thiaselenines

Svetlana V. Amosova*, Yulia I. Rykunova, Andrey S. Filippov, Maxim V. Penzik, Nataliya A. Makhaeva, Alexander I. Albanov, Vladimir A. Potapov

A. E. Favorsky Irkutsk Institute of Chemistry, Siberian Division of The Russian Academy of Sciences, 1 Favorsky Str., Irkutsk 664033, Russian Federation

E-mail: amosova@irioch.irk.ru

ABSTRACT: *Regio- and stereoselective reactions of 2-bromomethyl-1,3-thiaselenole with water and ethylene glycol are accompanied by a rearrangement with the expansion of the five-membered ring to six-membered 2,3-dihydro-1,4-thiaselenine derivatives. The reactions proceed under unusually mild conditions at room temperature presumably via seleniranium intermediates involving a series of unexpected cascade transformations. First representatives of unsaturated polyfunctional 2,3-dihydro-1,4-thiaselenines bearing O-, S- and Se-containing substituents were obtained in up to 80% yield.*

Keywords: Anchimeric assistance; Cascade reactions; Seleniranium cation; Rearrangement; Regio- and stereoselective reactions; 2,3-Dihydro-1,4-thiaselenines

1. Introduction

The development of a methodology for chemo-, regio- and stereoselective synthesis of polyfunctional heterocycles is an important fundamental task. Recently the interest has increased to cascade reactions including the synthesis of polyfunctional heterocyclic systems with selenium-containing groups [1-6]. The review [1] discussed the prospects for the development of a multicomponent cascade heterocyclization methodology for the successful synthesis of polyfunctional pyridines and chalcogen-containing pyridines.