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

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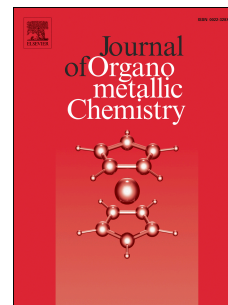
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Dedicated to Prof. Irina P. Beletskaya on the occasion of her anniversary

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

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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.

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