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Serbian Young Chemists' Club

Srpsko hemijsko društvo
Serbian Chemical Society

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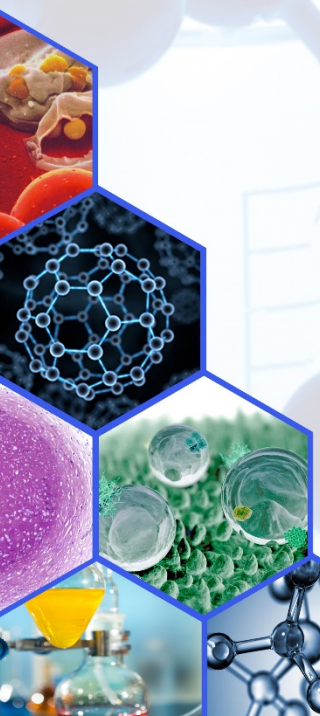

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NAUČNI ODBOR
SCIENTIFIC COMMITTEE

Dr Tamara TODOROVIĆ
Dr Ljubodrag VUJISIĆ
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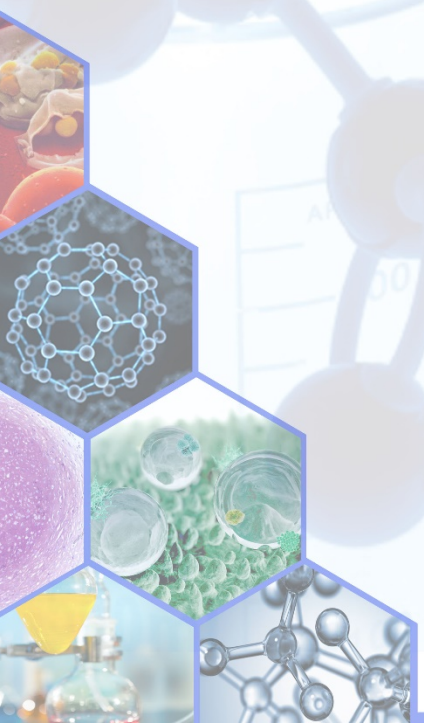


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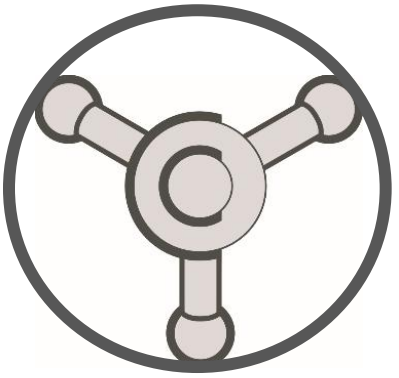


Serbian Young
Chemists' Club

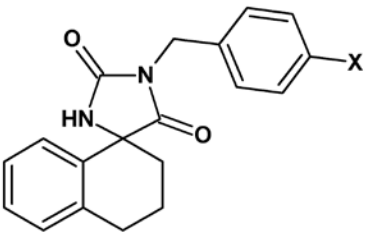
Hemijska sinteza
Chemical Synthesis

HS10 PE 8

Synthesis and characterization of 1-(4-substitutedbenzyl)-3',4'--dihydro-2'H-spiro[imidazolidine-4,1'-naphtalene]-2,5-dione derivatives as potential anticonvulsant agents

Anita M. Lazić[1], Željko Mandić[2], Nemanja P. Trišović[2], Gordana S. Uščumlić[2]
[1]*University of Belgrade, Innovation Center of the Faculty of Technology and Metallurgy, Belgrade, Serbia*
[2]*University of Belgrade, Faculty of Technology and Metallurgy, Belgrade, Serbia*

Among the diverse pharmacological activity reported for spirohydantoin and the closely related spirosuccinimides, their anticonvulsant and antiproliferative activities are commonly encountered. Of all cyclic ureide derivatives, Phenytoin (5,5-diphenylhydantoin) is one of the well-known commercially available anticonvulsants, which is also widely used as an antiarrhythmic agent. However, the clinical use of 5,5-diphenylhydantoin is limited by its central nervous adverse effects in addition to a wide variety of drug interactions [1]. With the aim of developing new analogs with a more efficient therapeutic effect, a series of 1-(4-substitutedbenzyl)-3',4'-dihydro-2'H-spiro[imidazolidine-4,1'-naphtalene]-2,5-diones, have been synthesized, characterized by melting points, FT-IR, ^{1}H and ^{13}C NMR spectroscopic techniques, and evaluated for anticonvulsant activity. The objective of the present investigation is to identify the pharmacological impact of the spirocyclic attachment of a semi-rigid tetralin residue at C-5 of the imidazolidine-2,4-dione ring and to explore the effect of substitution at N-3 on anticonvulsant activity.



X = H, CH_3, OCH_3, Cl, Br, CN, NO_2

Figure 1. Structure of the investigated spirohydantoin derivatives

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