BOOK OF ABSTRACTS

6. CONGRESS
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2019 | October 13–17

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BOOK OF ABSTRACTS

Abstracts of the 6th CONGRESS OF THE SERBIAN GENETIC SOCIETY

2019 | October 2019

VRNJAČKA BANJA · SERBIA

03 – 07 Poster

IN VITRO DNA PROTECTIVE ACTIVITY OF SELECTED PYRAZOLINES

Nezrina Mihović [1], Sanja Matić [2], Jovana Muškinja [1], Adrijana Burmudzija [1], Zoran Ratković [1], Milan Mladenović [1], Nevena Stanković [1], Snezana Stanić [2]

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Pyrazolines are well known nitrogen-containing five-membered heterocyclic compounds with various pharmaceutical activities such as analgesic, antibacterial, antifungal, anticancer, antiviral, anti-inflammatory, antitubercular, antidepressant, anticonvulsant, antihyperglycemic, antipyretic, etc. This study aims to investigate the in vitro DNA protective effect of twenty-four pyrazoline derivatives with vanillic and ferrocenyl fragments. Our previous results showed that both fragments are responsible for various biological activities, and slight changes in their structure induce sometimes dramatic difference in activities. Those compounds designated as 3a-3f, 4a-4f, 5a-5f, and 6a-6f, have been tested on hydroxyl radical-induced DNA damage in various concentrations (25, 50, 100, 200, and 400 μg/mL). The decreasing order in the reduction of DNA damage among the compounds was found to be: 3d > 3e > 3a > 3b > 3f > 3c; 4d > 4e > 4a > 4c > 4f > 4b; 5e > 5a > 5c > 5f > 5d > 5b; and 6d > 6c > 6f > 6e > 6a. Results showed that the best *in vitro* DNA protective potential against hydroxyl radicals have propyl or butyl derivatives (3d and 6d followed by 4d and 5c) and can be identified as the most promising substrates. From this point of view length of carbon chain in this case could be a key factor for in vitro DNA protective activity of selected pyrazolines.

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DNA, PYRAZOLINES, HYDROXYL RADICAL

03 – 08 Poster

DNA DAMAGE INDUCED BY SELECTED PYRAZOLINES IN RAT LIVER USING COMET ASSAY

Nezrina Mihović [1], Sanja Matić [2], Jovana Muškinja [1], Adrijana Burmudzija [1], Zoran Ratković [1], Milan Mladenović [1], Nevena Stanković [1], Snezana Stanić [2]

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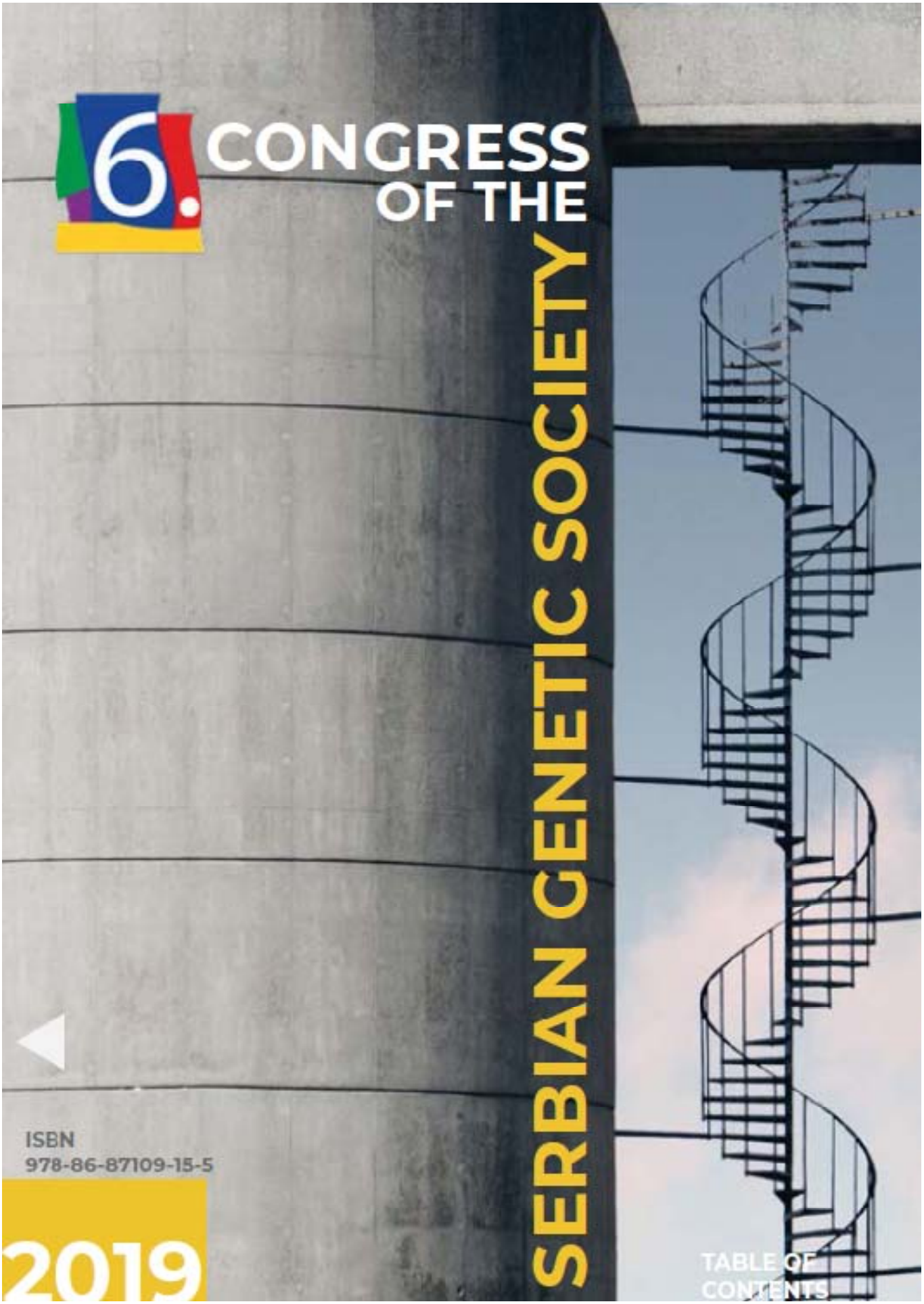
Pyrazolines are well known biological agents with various pharmacologically activities. As far as we know there is no previous study aimed at determining the genotoxicity of pyrazolines. The *in vivo* comet assay was performed to evaluate, whether or not eight selected pyrazoline derivatives with vanillic and ferrocenyl fragments, namely 3c, 3f, 4d, 4e, 5e, 5f, 6c, and 6d can damage the DNA in rat livers. No statistically significant difference was observed in the 4d, 4e, 5e, and 6d-treated groups upon comparison with the negative control. Significantly increase of the total comet score was detected in the 3c, 3f, 5f, and 6c treatment groups in comparison with the rats in the negative control group and significant less total score than those of the positive control group. According to the *in vivo* genotoxicity assays, propyl or butyl derivatives (4d, 4e, 5e, and 6d) seem to be the most promising substrates due to their non-genotoxic effect.

This work was financed by the Ministry of Education, Science and Technological Development, Republic of Serbia, Grants No. III 43004 and III 41010.

DNA, PYRAZOLINES, COMET ASSAY

6. CONGRESS OF THE SERBIAN GENETIC SOCIETY



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