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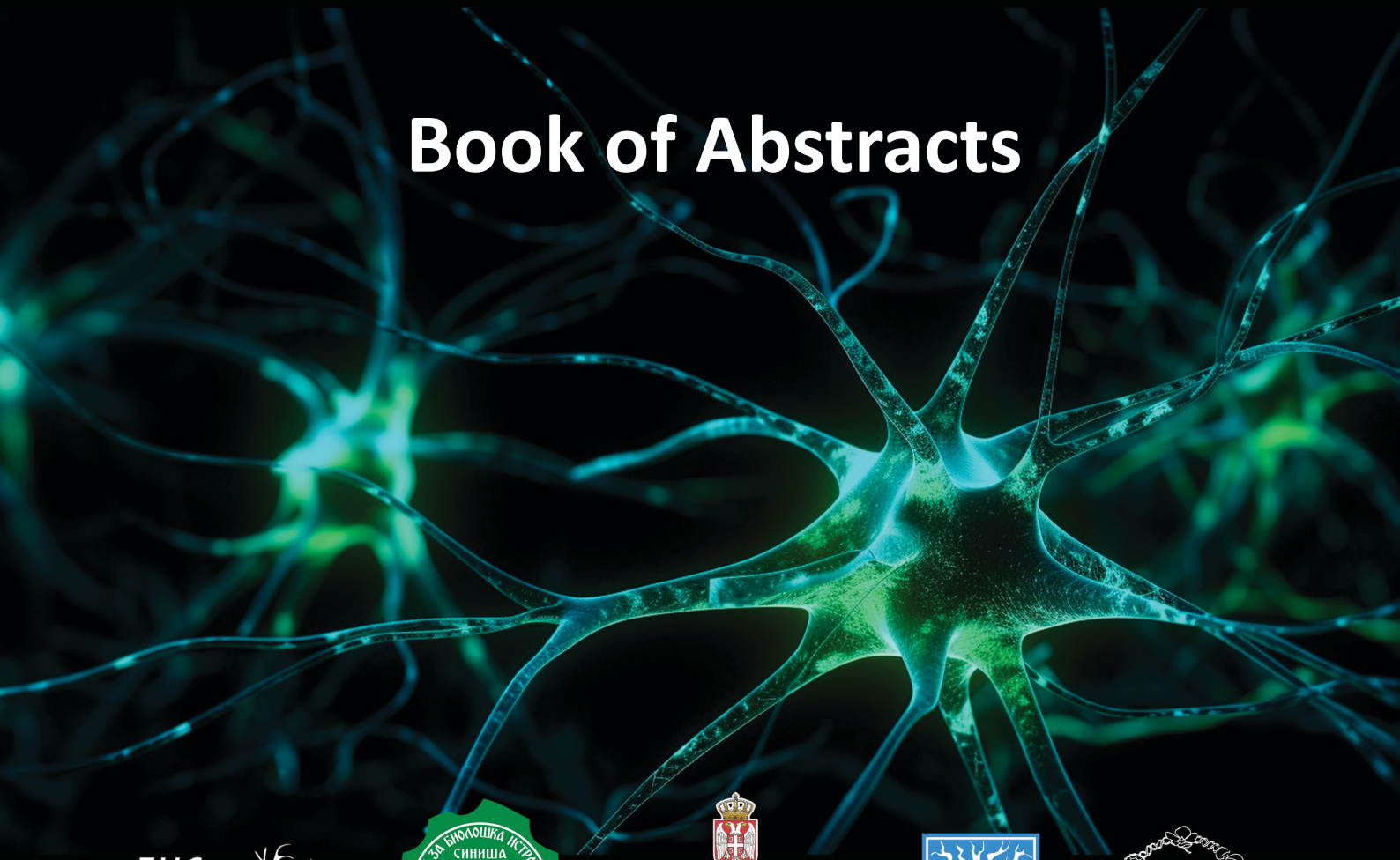

Book of Abstracts

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Dietary supplementation with flaxseed oil ameliorates trimethyltin (TMT)-induced neurodegeneration and gliosis in female Wistar rats

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It is increasingly apparent that the prevention/treatment of neurodegenerative disorders is not only achieved through pharmacological therapy but also through the consumption of natural products. Flaxseed oil (or linseed oil, FSO) derived from the seeds of the flax (*Linum usitatissimum L.*) gained worldwide awareness as a neuroprotective agent due to its high content of omega-3 polyunsaturated fatty acids (n-3 PUFAs). Thus, the aim of this study was to examine the preventive effects of dietary FSO in trimethyltin (TMT) - induced hippocampal neurodegeneration and gliosis in female Wistar rats. Animals were continuously treated with FSO (1 ml/kg, orally) for two weeks, then received a single dose of TMT (8 mg/kg, i.p.), and application of FSO continued for twenty-one days. Data have convincingly shown that FSO continuous treatment ameliorated TMT-induced neuronal loss in the CA3 hippocampal region and ameliorated astrogliosis and microgliosis. FSO treatment elevated all tested n-3 fatty acids in the hippocampus: α-linolenic acid (ALA), docosapentaenoic acid (DPA), and docosahexaenoic acid (DHA), and consequently increased total amount of n-3 PUFA. However, no changes in n-6 fatty acids due to FSO treatment were observed. Consequently, FSO lowered n-6/n-3 ratio compared to TMT, having a protective effect on fatty acid profile in hippocampus. These findings support beneficial neuroprotective properties of FSO against TMT-induced model of neurodegeneration and hint at a promising preventive use of FSO in hippocampal degeneration and dysfunction.

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