

# 5<sup>th</sup> Symposium of Young Researchers on Pharmacognosy



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## BOOK OF ABSTRACTS



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# **BOOK OF ABSTRACTS**

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### Phytochemical investigation of cultivated *Juncus hybridus*

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Plants belonging to the family Juncaceae accumulate different types of secondary metabolites, e.g. phenanthrenes, flavonoids, coumarins, triterpenes, steroids, and phenolic acid derivatives. Among them, phenanthrenes are a promising group of natural small molecules, possessing noteworthy pharmacological activities, like antiproliferative, antibacterial, anti-inflammatory, and sedative effects. According to previous studies oxidative stress and fungal infection induce the biosynthesis of these compounds in plants [1,2]. Our work aimed to analyze the chemical composition of a *Juncus* species, *Juncus hybridus*, cultivated under controlled conditions.

The isolation was started by extraction of the dried and ground whole plant with methanol. After evaporation, the extract was dissolved in 50% aqueous methanol, and solvent-solvent partitions were performed with *n*-hexane, chloroform, and ethyl acetate. The rough separation of the components of the chloroform and ethyl acetate phases was performed by column chromatography, and then further purifications were made by gel filtration and preparative thin-layer chromatography. As a final purification step, we used high-performance liquid chromatography. The structure elucidation of the compounds was carried out by NMR and HRMS experiments and by comparison of spectroscopic data with literature values.

The results allowed the identification of phenanthrenes, flavonoids, truxinic acid, and megastigmane derivatives, among them one new compound from the plant. This is the first time that truxinic acid derivatives have been isolated from a Juncaceae species. The antibacterial investigations of these compounds are in progress.

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