

BOOK of ABSTRACTS

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Сојуз на хемичарите и технолозите на Македонија
Society of Chemists and Technologists of Macedonia

**26th Congress of
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**20–23 September 2023
Metropol Lake Resort
Ohrid, N. Macedonia**



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Zinc Complex of 3-Hydroxyflavone: Spectrophotometric Determination and their Antioxidative Profiles

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Flavonoids, widely distributed second metabolites of plants, have a large number of functions. Nowadays, with more nature-oriented lifestyle, the role in plants and potential benefits for humans and animals became more and more important.¹

3-Hydroxyflavone (3HF) represents the backbone of all flavonols, a widespread class of flavonoids. Interestingly, this compound is not found naturally in plants. Regardless, 3HF is commonly applied as a model molecule because it possesses an excited-state intramolecular proton transfer effect and may serve as a fluorescent probe in studies of either membranes or intermembrane proteins. It has also been shown that 3HF inhibits metastasis of human osteosarcoma cells and reduces tumor growth in vivo.

With aim to find wider application of 3HF, its complexes with metal ions attract the attention of the researchers. Beside the characterization of zinc complex with 3HF, we reported the validation of the developed simple and low-cost spectrophotometric determination of 3-hydroxyflavone based on its zinc complex. Furthermore, the antioxidant capacities of the synthesized complex and 3HF itself were tested by the DPPH method, followed by the evaluation of more positive issues of zinc 3HF complex. The results of the performed study highlighted the suitability of zinc complex 3HF both for spectrophotometric determination, as well as to explore future applications of its potent bioactivity.

Keywords: 3-hydroxyflavone; zinc complex; spectrophotometric determination; DPPH.

References

1. Mohammed, Von H.: Natural and Synthetic Flavonoid Derivatives with Potential Antioxidant and Anticancer Activities, Saarbrücken 2009.