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Fund “Nauka” Project № 18018 Resume – Competitive-based Session 2018:

“Determination of biological activity and antioxidant properties of novel synthesized bexarotene analogues”

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Following the synthesis of new bexarotene-derived compounds, it is of particular importance to evaluate their biological activity, cytotoxicity, and cytostatic potential. The data obtained would contribute to a better knowledge of such compounds, as well as to the determination of their safety profile. It is the study of biological activity and safety profile that underlies the possibility of application in the treatment of a number of diseases.

The aim of this research project is to conduct tests to determine the biological activity as well as the antioxidant potential of newly synthesized retinoid analogs of antineoplastic drugs – bexarotene. The theoretical assessment of the toxicity and pharmacological action of the newly obtained compounds was determined by the method of mathematical prediction in a previous project.

The expected results of the scientific project are related to the determination of the possible biological activity of bexarotene analogs, as there are no data in the literature for this type of compound. This would support future studies related to the determination of the safety profile and action of other groups of drugs with a similar structure, in order to refine the treatment of socially significant diseases.

The scientific community in the field of medicine and pharmacy is following with interest all studies with bexarotene and its analogs because this drug has demonstrated good therapeutic results and is considering all possibilities for its wider application in the treatment of cancer and diseases affecting the nervous system.

The search for new drugs and approaches in the treatment of cancer is a leading goal in medical and pharmaceutical practice in the world. The scientific contribution of the project is expressed in the relevance of the topic, namely the modification of the basic structure, synthesis, and analysis of drug derivatives for the treatment of some of the most severe and socially significant diseases – oncological. After successful synthesis and analysis of bexarotene analogs, their potential biological activity was determined by a biological method using the DPPH test. In addition, a QSAR assay was performed to assess the toxicity and pharmacological action of the newly obtained compounds.