



Fund “Nauka” Project № 25006 Resume – Competition-based Session 2025:

“Investigation of the enzyme-inhibitory potential of representatives of the genus *Thymus* (Lamiaceae)”

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Thyme (*Thymus* spp.) is a medicinal plant well known since antiquity for its beneficial effects on the respiratory and digestive systems. In recent years, increasing scientific interest has focused on its effects on key enzymatic systems in the human body that are associated with chronic diseases such as neurodegenerative disorders, diabetes mellitus, and metabolic and inflammatory conditions. To date, no similar studies have been conducted in Bulgaria, which opens a promising scientific niche for the characterization of local wild-growing species and their potential for novel pharmacological applications.

The main objective of the project is to investigate extracts from wild-growing thyme species collected in the region of Northeastern Bulgaria with regard to their enzyme-inhibitory activity.

The specific objectives include:

1. Collection and taxonomic identification of wild-growing thyme species;
2. Preparation of liquid extracts from the collected species;
3. Evaluation of enzyme-inhibitory activity using screening kits and colorimetric measurement of the results;
4. Comparative analysis of the species in relation to the available scientific literature;
5. Interpretation of the data in a pharmaceutical context;
6. Dissemination of the results

The expected outcomes include enrichment of current knowledge regarding the pharmacological properties of wild-growing thyme and the acquisition of data on the enzyme-inhibitory activity of the extracts. The results will be published in the periodical journals of Medical University–Varna and in an indexed, peer-reviewed journal with an impact factor (IF).

The expected results include enrichment of current knowledge on the biological activity of local wild-growing species of the genus *Thymus* (Lamiaceae), with particular emphasis on the evaluation of their enzyme-inhibitory potential. These

findings may serve as a starting point for future interdisciplinary projects and for the identification of new practical applications.

The scientific output of the project will include the preparation of a publication in the periodical journals of Medical University–Varna, as well as in a peer-reviewed and indexed journal with an impact factor. The results will also be presented at a national or international scientific conference.