

STATEMENT

by assoc. prof. Stanislava Ivanova,
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for the acquisition of educational and scientific degree PhD

Field of Higher Education: 4. Natural sciences, mathematics and informatics

Professional Area: 4.3. Biological Sciences; Doctoral Programme: **Botany**

Author: Donika Petrova Gyuzeleva

Topic: Biological and Phytochemical Research on Plants in the Flora of Bulgaria with a Potential for Biotechnological Application

Scientific supervisors:

Prof. Dr. Plamen Stefanov Stoyanov - Plovdiv University "P. Hilendarski"

Prof. Dr. Anelia Vesselinova Bivolarska - Medical University, Plovdiv

1. General presentation of the procedure and the PhD student: By order No. RD - 21 - 2058 of 15.11.2024 of the Rector of Plovdiv University "Paisiy Hilendarski", I have been appointed as a member of the scientific jury, under the procedure for the defense of a dissertation on the topic " Biological and Phytochemical Research on Plants in the Flora of Bulgaria with a Potential for Biotechnological Application" for the acquisition of the educational and scientific degree "doctor". The author of the dissertation is Donika Petrova Gyuzeleva - a PhD student in full-time study at the Department of "Botany and Methodology of Biology Education", with scientific supervisors Prof. Dr. Plamen Stoyanov and Prof. Dr. Anelia Bivolarska. The set of materials presented by Donika Gyuzeleva under the procedure is in accordance with the Regulations for DAS of PU and includes a complete set of documents. No plagiarism was detected.

2. Relevance of the topic

Since ancient times, medicinal plants have played an important in human society. Although many plants were used in the traditional medicine for centuries, the dynamics and the number of studies on the biological activity of plant-derived compounds are significant. It is highly likely that in the next decades, molecules of plant origin to be included in the composition of some novel medicinal products. I strongly believe that the topic of the dissertation is relevant.

3. Knowledge of the problem

The review provides comprehensive information on all aspects related to the study. The PhD student demonstrates very good knowledge of the topic. The language of the presentation is clear and precise. 257 references were cited.

4. Research methodology

The methodology of the conducted study is well structured. The large volume of research that was conducted is impressive. Various modern analytical techniques were used.

5. Characteristics and evaluation of the dissertation work and contributions

The PhD thesis consists of 128 pages. It is illustrated with 39 figures and 12 tables. 257 references were cited. The achieved results are associated with a scientifically applied nature. Detailed studies have been conducted on the chemical composition of fruits and seeds of *Centaurea thracica*. The differences in the characteristics of *Marrubium friwaldskyanum* and *Marrubium peregrinum* were analyzed. Some important new areas for potential applications in the pharmaceutical industry were targeted.

6. Assessment of the publications and the personal contribution of the PhD student

The PhD student presented 4 publications related to the dissertation work. All publications are included in Scopus/ WoS, and 3 of them are published in journals with IF. Donika Gyuzeleva is the first or the last author in each publication, which is associated with a high personal contribution.

7. Doctoral Dissertation Summary

It is properly structured, and it is composed by 47 pages. It adequately reflects the essence and achieved results of the dissertation work.

8. Recommendations for future work

To continue research on the study of the therapeutic potential of plant species from the Bulgarian flora.

CONCLUSION

The presented data and facts give me reason to confidently assess the dissertation work POSITIVELY and to propose to the esteemed scientific jury to award the educational and scientific degree "**doctor**" to Donika Petrova Gyuzeleva in the field of higher education: 4. Natural Sciences, Mathematics and Informatics, professional field 4.3. Biological Sciences, doctoral program **Botany**.