

Bx. № 509 / HO-05 / 13.06.2025г.

OPINION

by Assoc. Prof. Stefan Antonov Philipov, PhD

Institute of Organic Chemistry with the Centre of Phytochemistry

Bulgarian Academy of Sciences

on the PhD thesis for awarding the educational and scientific degree "**doctor**" in higher education field: 4. Natural sciences, mathematics and informatics, professional field: 4.3. Biological Sciences, PhD Program: Botany

Author: **Gabriela Ivanova Haist**

Title: **Study of galantamine biosynthesis in *Hippeastrum papilio* (Ravenna) van Scheepen**

Scientific supervisor: Prof. Strahil Berkov, PhD - Institute of Biodiversity and Ecosystem Research – BAS

General presentation of the procedure and the PhD student

By order No. 42 of 02.05.2025 of the Director of IBER-BAS, I have been appointed as a member of the scientific jury in the procedure for the defense of a PhD thesis on the topic "Study of galantamine biosynthesis in *Hippeastrum papilio* (Ravenna) van Scheepen" for the acquisition of the educational and scientific degree "doctor" with author Gabriela Ivanova Haist " in the field of higher education: 4. Natural sciences, mathematics and informatics, professional field: 4.3. Biological sciences, PhD Program: Botany.

The set of materials on paper and electronic media presented by master Gabriela Heist is in accordance with the Regulations for the development of the academic staff of IBER - BAS, meets the criteria and includes all necessary documents, as in accordance with Art. 9 of the "Regulations on the conditions and procedure for acquiring scientific degrees and for holding academic positions at IBER-BAS", when presenting the PhD thesis in the form of bound scientific publications, the

chapters "Materials and Methods", "Results" and "Discussion" are replaced by copies of the articles on the topic of the dissertation.

The PhD student has submitted a report, certified by the scientific secretary of IBER-BAS, for the accumulated credits, as follows: completion of the educational program - 180 points (required mandatory minimum 130 points); approval of the implementation of the scientific program - 64 points (a mandatory minimum 40 points is required); published scientific results - 90 points (a mandatory minimum 30 points is required). The total number of credits for the period of the doctoral studies is 334 points, which exceeds the mandatory minimum of 250 points. The PhD student has also attached 4 publications on the topic of the dissertation and a list of participation in scientific events. The presented abstract has been prepared according to the requirements and it presents the results, discussions and conclusions included in the dissertation work.

The aim of the PhD thesis is clearly formulated, as well as the tasks for its implementation. The process of biosynthesis and accumulation of the alkaloid galantamine under the influence of biotic and abiotic factors in the organs of hydroponically grown *Hippeastrum papilio* plants is monitored.

The presented conclusions and contributions are well formulated and correspond to the scale of the research, emphasizing their applicability.

The results of the research conducted have been summarized in four scientific reports, published in renowned international journals with an impact factor and exceed the requirements for acquiring the scientific and educational degree "doctor".

Conclusion

The presented PhD thesis contains original scientific and scientifically applied results, which represent an original contribution to science and in terms of quantity and quality meet all the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB), the Regulations for its Implementation and the Regulations for the Implementation of LDASRB of BAS, as well as fully comply with the specific requirements of the Regulations of IBER-BAS for the application of LDASRB.

All this gives me reason to vote positively and to recommend to the honorable Scientific Jury to award the educational and scientific degree "Doctor" to master Gabriela Ivanova Heist in the field

of higher education: 4. Natural sciences, mathematics and informatics, professional field 4.3.
Biological sciences, scientific specialty Botany

Sofia, 13.06.2025

Reviewer:

(Assoc. Prof. Stefan Philipov, PhD)