

BRIEF REFEREE REPORT

by Assoc. Prof. Mariyana Hristova Gozmanova, PhD
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on the materials submitted for participation in a competition
for the academic position of **Associate Professor**
at Plovdiv University “Paisii Hilendarski”,
in the field of higher education 4. Natural Sciences, Mathematics and Informatics,
professional field 4.3 Biological Sciences,
scientific specialty **Botany**

In the competition for the academic position of Associate Professor, announced in the State Gazette, issue No. 96 of 11.11.2025, and on the website of Plovdiv University “Paisii Hilendarski”, for the needs of the Department of Botany and Biology Education at the Faculty of Biology, the following candidate has applied:

Chief Assistant Professor Krasimir Tihomirov Todorov, PhD, from Plovdiv University “Paisii Hilendarski”

1. General presentation of the submitted materials

By Order No. RD-22-39 of 09.01.2026 of the Rector of Plovdiv University “Paisii Hilendarski” (PU), I have been appointed as a member of the Scientific Jury in a competition for the academic position of Associate Professor at PU in the field of higher education 4. Natural Sciences, Mathematics and Informatics, professional field 4.3 Biological Sciences, scientific specialty “Botany”, announced for the needs of the Department of Botany and Biology Education at the Faculty of Biology.

Only one candidate has submitted documents for participation in the announced competition: Chief Assistant Professor Krasimir Tihomirov Todorov, PhD, from Plovdiv University “Paisii Hilendarski”.

The set of materials submitted in hard copy by Chief Assistant Professor Krasimir Todorov complies with the Regulations for the Development of the Academic Staff of PU and includes the following documents:

1. Application form addressed to the Rector for admission to the competition;
2. Curriculum Vitae in European format;
3. Diploma of higher education for the educational qualification degree “Master”, with supplement (original and copy);
4. Diploma for the educational and scientific degree “Doctor” (original and copy);
5. List of scientific publications;
6. Scientific publications (copies);
 - 6.1 List of citations;

7. Statement of compliance with the minimum national and additional faculty requirements (if applicable);
8. Annotations of the materials under Art. 65 of the Regulations of PU (in Bulgarian and a foreign language), with an extended habilitation report;
9. Self-assessment of contributions;
10. Declaration of originality and authenticity of the submitted documents;
11. Certificate of employment record;
12. Documents related to teaching activities;
13. Documents related to research activities;
14. Documents in accordance with the additional requirements of the respective faculty;
15. Other documents (list of scientific publications used for appointment to the position of Chief Assistant Professor).

The candidate has submitted a total of 23 scientific publications, 3 teaching manuals, and 2 research developments (1 certificate for registration of a utility model and 1 patent application), as well as participation as a team member in 7 national projects. Nineteen scientific publications that are not part of the doctoral dissertation are accepted for evaluation. Their quartile distribution is as follows: 19 publications, of which 7 are in Q1 journals, 1 in Q2, 1 in Q3, 9 in Q4, and 1 indexed in Web of Science without IF and SJR. The total impact factor of the publications submitted for the competition is 33.74.

2. Brief biographical data of the candidate

Krasimir Tihomirov Todorov completed a Bachelor's degree in Ecology at the Faculty of Biology of PU in 2011 and obtained a Master's degree in "Medicinal and Aromatic Plants" in 2013. In 2018, he defended his doctoral dissertation in the scientific specialty "Botany" at PU on the topic "Biosystematic study of the genus *Carduus* L. (Asteraceae) in Bulgaria". He began his academic career as an Assistant at PU in 2013 and has held the position of Chief Assistant Professor since 2018. Since 2025, he has also been working as a Chief Assistant Professor at the Faculty of Pharmacy, Medical University of Plovdiv, Department of Bioorganic Chemistry. According to the Scopus database (Scopus ID 56765637900), for the period 2018–2025 he has 17 publications, 61 citations, and an h-index of 5.

3. General characteristics of the candidate's activity

Evaluation of teaching and pedagogical activity

Chief Assistant Professor Krasimir Todorov, PhD, has substantial teaching experience in undergraduate and graduate programs at the Faculty of Biology of Plovdiv University "Paisii Hilendarski", the Lyuben Karavelov Branch of PU in Kardzhali, and the Faculty of Pharmacy at the Medical University of Plovdiv. His teaching activities include lecture courses in botany and plant ecology, as well as practical classes in botany, plant anatomy and morphology, plant ecology, hydrobiology, pharmacognosy, and pharmaceutical botany, including laboratory and field training. For the purposes of the competition, the candidate has submitted three teaching manuals: *Botany*, *Plant Anatomy and Morphology*, and *Plant Systematics*, which are aligned with the curricula and facilitate the learning process. He has supervised and co-supervised six bachelor's theses at the Department of Botany and Biology Education of the Faculty of Biology at PU. He has also participated in the organization and conduct of the competition "Journey into

Biology” and in examination committees for state exams, thereby actively contributing to the improvement of the quality of education.

Evaluation of scientific and applied research activity

Quantitative indicators of Chief Assistant Prof. Krasimir Todorov:

Criterion A (minimum 50 points): 50 points

Has obtained the educational and scientific degree (PhD) in the scientific specialty of Botany in 2018, following the defense of a doctoral dissertation, for which four scientific articles have been published.

Criterion B (minimum 100 points): 100 points

Four Q1 publications not overlapping with those submitted for the PhD degree.

Criterion G (minimum 200 points): 258 points

Fifteen publications indexed in Web of Science and Scopus (Q1–Q4), with a total JCR impact factor of **33.74**. In **five publications**, the candidate **is the first or corresponding author**.

Criterion D (minimum 50 points): 92 points

Forty-six citations in Web of Science or Scopus (excluding self- and semi-self-citations).

Having examined the materials provided, I find the candidate’s publication record to be very strong, and the total number of points according to scientific indicators for Chief Assistant Professor Dr. Krasimir Todorov (500 points) exceeds the required national minimum (400 points).

Scientific contributions

The research work of Chief Assistant Professor Krasimir Todorov, PhD, focuses on clarifying the taxonomic and phylogenetic affiliation of endemic and medicinal plant species from the Bulgarian flora, as well as on characterizing their chemical composition, metabolic profile, and biological activity with potential practical applications. An interdisciplinary approach is applied, integrating morphological, anatomical, molecular, phytochemical, and pharmacological methods.

Comparative anatomical studies of the Bulgarian endemic *Micromeria frivaldszkyana* and *Clinopodium vulgare* (Lamiaceae) significantly contribute to their taxonomic differentiation based on diagnostically important features of the leaf epidermis (G7.11). Molecular genetic analyses of ITS1 and tRNA^{Leu} confirm the phylogenetic proximity of *Micromeria dalmatica* and *C. vulgare*, refining the systematic position of the taxa within the Lamiaceae family (G7.15). The chemical composition of *M. frivaldszkyana* has been characterized in detail, revealing a high content of biologically active flavonoids, linarin, and rosmarinic acid (B4.1, B4.2). The antioxidant potential of the species was assessed using six different methods, and the extract exhibited selective *in vitro* antimicrobial activity against *Listeria monocytogenes* with a minimum inhibitory concentration of 10 mg/mL (B4.1). *In vivo* analyses demonstrate that the methanolic extract is non-toxic at oral doses up to 5000 mg/kg in Wistar rats and exhibits anti-inflammatory effects without adverse changes in brain function under subchronic administration (B4.2, G7.3).

Extensive studies on *Marrubium peregrinum* and *M. friwaldskyanum* include metabolomic profiling via GC-MS, UPLC-MS/MS, and ICP-MS, identifying approximately 500 chemical compounds and 12 elements, providing a comprehensive characterization of their metabolic composition (B4.3). Tissue-specific analyses revealed different plant organs as differentiated sources of biologically active molecules. Extracts demonstrated selective *in vitro* antitumor activity against colorectal adenocarcinoma (HT-29) and cervical adenocarcinoma (HeLa) cell lines, as well as pronounced antibacterial and immunomodulatory activity (B4.4). Antioxidant assessment shows the highest activity in leaf extracts, inducing dose-dependent contractile effects on rat smooth muscle with a dominant cholinergic mechanism (G7.2).

Floristic studies cover various habitats in Bulgaria with a focus on medicinal plants, endemics, fungi, and invasive species, emphasizing species diversity and conservation status. Studies of medicinal plants in the Western Rhodopes were conducted in the region of the town of Dospat (332 species belonging to 75 families, including 72 species of conservation significance) (G7.1), the village of Mugla (141 species from 40 families) (G7.9), and the ‘Canyon of the Waterfalls’ eco-trail area (96 species from 42 families, including endemic, rare, and protected taxa) (G7.10).

In Strandzha and along the Black Sea coast, 105 species of edible macromycetes were recorded, including 14 of conservation significance, such as the critically endangered *Boletus caucasicus*, as well as 59 species of medicinal plants (23.4% with conservation status) (G7.7, G7.8). Critically endangered species such as *Arbutus unedo*, *Sideritis syriaca*, and four Balkan endemics were identified (G7.8). Monitoring of protected plant species (*Pancratium maritimum*, *Calluna vulgaris*, *Daphne pontica*, etc.) and the invasive species *Amorpha fruticosa* was conducted in the protected areas “Marina Reka” and “Silistar” (G7.14).

In the Upper Thracian Lowland surveys conducted at 14 railway stations identified 267 species from 53 families, with 9.4% being alien and invasive species, highlighting the role of the railway network as a key dispersal pathway (G7.12).

Implementation activity

Chief Assistant Professor Krasimir Todorov, PhD, has submitted a certificate for the registration of a wound-healing skin patch containing methanolic extract of *Marrubium peregrinum* (Reg. No. 4924 U1), as well as a patent application for the method of its production (No. 113914/12.06.2024). This demonstrates his active involvement in applied research through the development of innovative products with potential medical and pharmaceutical applications.

4. Evaluation of the candidate’s personal contribution

The submitted materials demonstrate a profound interest in botany, taxonomy, and phytochemistry, and include original scientific and applied contributions highlighting the candidate’s high competence and substantial experimental experience.

5. Critical remarks and recommendations

I have no critical remarks regarding the submitted documentation.

6. Personal assessment

My evaluation of the candidate is highly positive. Chief Assistant Professor Krasimir Todorov, PhD, demonstrates a responsible and highly professional approach to his research activities and possesses deep scientific knowledge, enabling him to produce high-quality and impactful scientific work. As a lecture, he is distinguished by his expertise, kindness and responsiveness, and he enjoys a high level of respect and trust within the student community.

CONCLUSION

The documents and materials submitted by Chief Assistant Professor Krasimir Todorov, PhD, meet all the requirements of the Law on the Academic Staff Development in the Republic of Bulgaria, the Regulations for the Acquisition of Scientific Degrees and Academic Positions at Plovdiv University, and the specific requirements of the Faculty of Biology at PU.

After reviewing the materials and scientific works presented and analyzing their significance and contributions, I confidently give **my positive assessment** of the academic performance and recommend to the Scientific Jury to prepare a report- proposal to the Faculty Council of the Faculty of Biology for the election of Chief Assistant Professor Krasimir Todorov, PhD, to the academic position of **Associate Professor** at Plovdiv University “Paisii Hilendarski” in the field of higher education 4. Natural Sciences, Mathematics and Informatics, professional field 4.3 Biological Sciences, scientific specialty “Botany”.

09.02.2026

Prepared by:
(signature)

Assoc. Prof. Mariana Gozmanova,
PhD
(academic position, scientific degree,
first name, last name)