

REVIEW

Subject: Competition for the academic position of "Associate Professor" in the specialty "General and Clinical Pathology", professional field 7.1. Medicine, field of higher education 7. Health and Sports - two positions of 0.5 full-time position for the Department of "General and Clinical Pathology, Forensic Medicine and Deontology", Faculty of Medicine and 1 full-time position for the Clinic of "General and Clinical Pathology" at the University Hospital "St. Marina" EAD, announced in the State Gazette, issue 85/08.10.2024

with candidate: Dr. Nadezhda Todorova Stefanova

Reviewer: Professor Dr. Petar Ivanov Genev, MD, Department of General and Clinical Pathology, Forensic Medicine and Deontology, Medical University - Varna

1. General information and biographical data

Dr. Nadezhda Stefanova was born on 10.12.1986 in the town of Pavlikeni. She completed secondary education (1998-2005) at the Bacho Kiro Secondary School - natural sciences and mathematics, with intensive study of English in her hometown. In 2005-2011 she studied Medicine at the Medical University - Varna and obtained a Diploma with Registration number 001477/22.11.2011). After graduating, she started working as a doctor in the Pathology Clinic at the University Hospital "St. Marina" EAD - Varna, and in 2012 she was elected as an assistant and resident at the MU - Varna.

Dr. Stefanova also fully participated in the diagnostic process, gradually mastering all the basic methods of biopsy practice. She obtained a specialty in "Pathology and Cytopathology" (Diploma with reg. No. 022567/1.03.2019). During this time, Dr. Stefanova successfully presented herself at a competition for chief assistant at the Department of Pathology at the MU - Varna.

Over the years, Dr. Stefanova has shown diverse scientific interests, primarily in the field of tumor pathology - diseases of the hematopoietic apparatus, molecular mechanisms of cell death, experimental morphology,

casuistry. Accordingly, a large part of her publications are in this field and, naturally, this is the topic of her dissertation: "Expression of markers for autophagy and necroptosis in colon carcinoma", successfully defended in 2018. In the period 2014-2020, she worked on eight scientific projects.

Dr. Stefanova makes efforts to follow the latest developments in the specialty and regularly participates in various events to maintain her qualifications - diagnostic seminars, including the European School of Pathology, organized by the European Society of Pathology, pedagogical courses, learning of methodologies and diagnostic algorithms.

2. General description of the submitted materials

For this competition, the candidate has submitted for review a total of 24 publications in scientific journals, distributed as follows:

- abstract of dissertation work for awarding the educational and scientific degree "Doctor": Expression of markers for autophagy and necroptosis in colon carcinoma (Group of indicators A 1)
- habilitation work - monograph: Myeloproliferative neoplasias. Past, present and future. Publishing House of MU - Varna, 2023, ISBN: 978-619-221-471-5 (Group of indicators B 3)
- 11 articles published in scientific journals, referenced and indexed in world-renowned databases with scientific information (Group of indicators G7)
- 11 publications in non-refereed journals with scientific review and indexed in world-renowned databases with scientific information (Group of indicators D8)
- Reference for citations (Group of indicators D 10)

3. General characteristics of the candidate's research and applied scientific activities

The dissertation examines the mechanisms of occurrence and the role of alternative cell death pathways (autophagy and necroptosis) in colon carcinoma. The immunohistochemical expression of appropriately selected markers for both processes is correlated with clinical and morphological parameters using several assessment scales. The significance of autophagy and necroptosis for the overall survival of patients, their potential prognostic value and a profile of patients with an increased risk of death from colon carcinoma are discussed. Part of the results have been published in four articles in specialized oncology journals in Bulgarian. The dissertation is evaluated at 50 points, which meets the requirements of Indicator A1.

The monograph presented as a habilitation thesis is also in the sphere of oncopathology. It represents a thorough literature review and analysis of myeloproliferative disorders - general characteristics, diagnostic problems, risk stratification and prognosis. The emphasis falls on the morphological changes in the bone marrow in individual myeloproliferative processes and the differential diagnosis of bone marrow trephine biopsies. The monograph is evaluated at 100 points, which meets the requirements of Indicator B 3.

To cover Group of indicators G, Dr. Stefanova has provided for review 11 articles published in scientific journals, referenced and indexed in world-renowned databases of scientific information and another 11 articles in non-refereed journals. Thematically, these articles present separate elements of the doctoral thesis and monograph, as well as cases from the practice of the pathologist. Part of the developments are in collaboration with various clinicians - they include description and morphological assessment of biopsy and experimental materials. The total score of this scientific production is 203.02 with a minimum of 200 points required. This certifies that the minimum requirements of Group of Indicators D have been met.

The Library of the Medical University of Varna has issued an Academic Report on the publications and citations of Dr. Stefanova, which certifies that four citations have been found, corresponding to 60 points. This meets the requirements of Group of Indicators D and testifies that candidate's scientific activity is reflected in the periodical literature. It should be noted that the citations are in prestigious medical journals with a high Impact Factor, such as: Frontiers Medicine, IF 5.1; Cureus, IF 1.1; Thoracic Cancer, IF 2.3; Int Immunopharmacol, IF 4.8.

Dr. Stefanova's publication activity covers almost all areas of pathology, including molecular and experimental pathology. A large part of the scientific works are performed of authors from different medical specialties, which testifies to an interdisciplinary approach and teamwork skills. In many of the publications, Dr. Stefanova is the first or sole author or the only pathologist.

4. Assessment of the candidate's pedagogical training and activities

Medical University of Varna issues a Certificate of Academic Workload of Dr. Stefanova for the last five years (Issue No. 112-476/24.10.2024), which shows that she has more than 12 years of teaching experience and has conducted between 250 and 400 hours of classes, including English-language training, with an annual norm of 220 teaching hours. The Certificate makes it clear that Dr. Stefanova conducts practical classes in all disciplines taught at the Department with students of medicine and dentistry, including in the English-language training program; she has also been assigned some lectures from the lecture course. In addition, she has also performed administrative activities, such as - course supervisor of the fourth year "Medicine" in the English-language program (2016-2023).

5. Main scientific and applied scientific contributions

Main scientific achievements in the doctoral thesis, habilitation work, as well as in thematically related full-text publications:

- Various aspects of common oncological diseases at the molecular level are clarified, in particular - in colon carcinoma and myeloproliferative processes.
- The study of alternative molecular mechanisms of cell death and survival (mainly in the doctoral thesis and four scientific publications) contributes to the understanding of the role of autophagy and necroptosis in the biological behavior of colorectal carcinoma.
- Enriching science with such new facts is important for clarifying carcinogenesis in other localizations.
- The habilitation work (and five scientific publications) contributes to clarifying the mechanisms for the occurrence of myeloproliferative neoplasms and establishes additional morphological changes in the bone marrow.

The scientific and applied moments arise from the possibilities of molecular-pathological studies to determine appropriate targets for therapeutic impact and/or factors with predictive and/or prognostic value. Such facts are:

- low cytoplasmic and high nuclear expression of the necroptosis marker RIP3 for low survival; high expression of Beclin-1 for low overall survival in colorectal carcinoma
- high expression of Beclin-1 in tumor tissue for low overall survival and increased risk of progression in colorectal carcinoma
- The description of morphological changes in the bone marrow in myeloproliferative processes finds application in the differential diagnosis for the daily diagnostic work of the pathologist

A significant share in the scientific activity of Dr. Stefanova is occupied by descriptions of cases from the practice of the pathologist. The description of cases contributes to the enrichment of the scientific literature on rare diseases and better diagnostics of these lesions. Dr. Stefanova's scientific output is distinguished by its contemporary thematic focus, methodological competence and clinical applicability.

6. Personal impressions and opinion of the reviewer

I have known Dr. Stefanova since her student years. I witnessed her immense desire to acquire new knowledge and skills. Later, as an assistant professor at the Department, she demonstrated an ability to generate ideas, a desire to improve her qualifications and good collegial relationships. I am convinced that she will successfully cope with the challenges of her new position.

CONCLUSION

The documentation submitted for the Competition is complete and meets all of the procedural requirements in the regulatory documents. The candidate's scientific output meets the necessary criteria. I am impressed by the candidate's personal and professional qualities and I believe that she fully meets the conditions for holding the position. Based on quantity and the quality of the submitted scientific works, their significance, the scientific and applied scientific contributions contained in them, I find it reasonable to propose Dr. Nadezhda Stefanova to occupy the academic position of "Associate Professor" in the professional field 7.1. Medicine, area 7. Health and Sports and I vote positively for this with full conviction.

20.02.2025

Varna

Signature:

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(Prof. Dr. Peter Ghenev, MD)