

OPINION

by **Assoc. Prof. Maria Atanasova Radanova, PhD,**

Department of Biochemistry, Molecular Medicine and Nutrigenomics, Faculty of Pharmacy,
Medical University "Prof. Dr. Paraskev Stoyanov" – Varna,
Member of Scientific Jury according to an order No P-109-515/30.11.2023
of the Rector of Medical University of Varna

Regarding: a competition for acquiring the academic position “Associate Professor” in the scientific specialty "*Medical Genetics*", professional direction: 4.3. *Biological Sciences* in the field of higher education 4. *Natural sciences, Mathematics and Informatics*.

In the competition for “Associate Professor”, announced in State Gazette No 83/October 03, 2023 and in Internet page of Medical University "Prof. Dr. Paraskev Stoyanov" – Varna, for the needs of the *Department of Medical Genetics*, Faculty of Medicine (0.5 full-time position) and for *Laboratory of Medical Genetics* in UMBAL “St. Marina” – Varna (1 full-time position), as the only candidate participated **Ch. Assist. Prof. Mariya Levkova, MD, PhD.**

The documents set forth by Dr. Mariya Levkova align with the stipulations of Art.2b, para.2 and para.3 of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Regulations for the Implementation of the Law, as well as the Regulations on the Development of the Academic Staff of the Medical University of Varna, which announced the competition.

I am submitting this opinion in my role as an internal member of the Scientific Jury, in accordance with the decision made at its first meeting (Protocol No. 1/12.12.2023).

Education and career development of the candidate

Dr. Mariya Kostadinova Levkova earned her Master’s degree in Medicine in 2016 and a Doctorate in Genetics in 2021 from the Medical University “Prof. Dr. Paraskev Stoyanov” - Varna. Since 2016, Dr. Levkova has progressed through all stages of academic development, serving as an assistant and later as a chief assistant at the Medical University of Varna. In 2021, she specialized in “Medical Genetics” and has since been appointed as a *doctor medical genetics specialist* in the *Laboratory of Medical Genetics*, UMBAL “St. Marina” – Varna.

Dr. Levkova is fluent in German (C1) and English (C1). Between 2016 and 2021, she completed nine training courses and in 2021, she further enhanced her qualifications by successfully passing an examination to obtain The European Certificate in Medical Genetics and Genomics (ECMGG).

Assessment of the Candidate's Scientometric Indicators

Dr. Levkova participated in the competition with a total of 23 scientific works. Out of these, 21 items were submitted as proof of meeting the minimum requirements for holding academic position "Associate Professor", as per the Law on the Development of the Academic Staff in the Republic of Bulgaria. Additionally, she presented 2 scientific articles published in journals not indexed in global scientific information databases and are outside the minimum scientometric requirements for the position of "Associate Professor".

The scientific works of Dr. Mariya Levkova, presented in the current competition to meet the minimum scientometric requirements for occupying the academic position "Associate Professor", include:

A1: Doctoral thesis for the acquisition of the educational and scientific degree "PhD" - **50 points;**

C4: Scientific publications in journals referenced and indexed in world-renowned databases with scientific information (Web of Science and Scopus), equivalent to a habilitation thesis - 5 items, **107 points;**

G7: Scientific publications in journals referenced and indexed in world-famous databases with scientific information (Web of Science and Scopus) – 15 items, **216 points.**

Dr. Levkova has provided information for indicator D11, accounting for 25 citations, which reflects a scientific activity score of 50 points. This satisfies the minimum requirements for the academic position "Associate Professor", as per the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Regulations on the Development of the Academic Staff of the Medical University of Varna.

Among all publications submitted for the competition, eight have a cumulative real impact factor (IF) of **28.743**.

Research Activity and Contributions of the Candidate's Scientific Works

Dr. Levkova is actively engaged as a researcher and expert in four national research projects funded by the "Science" Fund, at the Medical University of Varna. She is also an active member of two scientific groups, NutriLect and LiquidBio, under Project No. BG-RRP-2.004-0009 -C02 "Medical University - Varna: Increasing translational achievements in medicine (MUVE-TEAM), financed by the European Union - NextGenerationEU, through National Recovery and Resilience Plan of the Republic of Bulgaria.

The outcomes of her scientific research have been showcased in 27 international and 15 national scientific events through presentations and posters.

The scientific publications that Dr. Levkova has presented under indicators **C4** and **G7** in her academic portfolio encompass four primary thematic areas in Medical Genetics.

1. *Reproductive Genetics (C4.3, C4.5, G7.4, G7.11, and G7.12);*
2. *Pediatric Genetics and Dysmorphology (G7.2, G7.5, G7.6, G7.7, G7.8, G7.9, G7.10, and G7.15);*

3. *Neurogenetics (C4.4, G7.1, and G7.14);*

4. *Medical-Genetic Counseling (C4.1, C4.2, G7.3, and G7.13)*

The main contributions of Dr. Levkova's scientific works are the following:

- The significance of various chromosomal disorders and variants of chromosomal polymorphisms among Bulgarian patients with reproductive disorders has been established;
- It was found through a meta-analysis that variants in genes related to dynein are associated with an increased risk of male infertility in carriers;
- An algorithm is proposed for using a stepwise approach when testing with a target panel of genes at the second stage of the analytical process in the study of patients with male sterility due to impaired spermatogenesis;
- It was established through a meta-analysis that genetic markers such as factor V Leiden, factor II, prothrombin, protein C, protein S and antithrombin are associated with an increased risk of ischemic stroke in young people in a Bulgarian population;
- Fragile X syndrome has been confirmed among Bulgarian children with intellectual disability/developmental delay/autistic behaviour;
- The advantage of cytogenetic analysis in the diagnostic process over molecular genetic methods for detecting the presence of mosaicism and balanced rearrangements is defined;
- New data are presented on the role of a single nucleotide polymorphism in the miRNA gene as a prognostic biomarker in a Caucasian cohort of patients with colorectal carcinoma;
- The role of miRNAs as prognostic markers in advanced colorectal carcinoma has been confirmed;
- Contributions of a confirmatory nature related to several described clinical cases and conducted overview reviews regarding the pathogenesis and etiology of various diseases are presented.

I accept all contributions as arranged and presented by Dr. Levkova. They exhibit a high level of professional expertise in the realm of medical genetics, along with interdisciplinary knowledge, particularly in its practical application. I have a minor critique concerning the layout of the contributions. I would recommend to Dr. Levkova, when formulating her contributions for the future, to avoid the description of the experiment, its goals and the obtained results, and to focus on the new and/or confirmatory facts from her research.

Academic and Teaching Activity of the Candidate

As per the attached reference, the average teaching load for Ch. Assist. Prof. Mariya Levkova, MD, PhD, is 252 hours per academic year, exceeding the standard of 220 hours. This

standard was established by the Academic Council of the Medical University - Varna, as per Protocol No. 30/April 11, 2011. Dr. Levkova is actively and fully involved in the *Medical Genetics* education of students from the specialties “Medicine” (BEO and AEO), “Pharmacy”, “Midwife”, “Nurse” and “Medical Laboratory Technician”.

Therapeutic and Diagnostic Activity of the Candidate

Dr. Levkova is actively involved in the advisory and analytical activities of the *Laboratory of Medical Genetics*. Her primary clinical focus lies in the genetics of infertility, oncogenetics, and both pre- and post-analytical medical genetic counseling.

Personal Impressions of the Candidate

I am acquainted with Dr. Maria Levkova as a responsible, meticulous, accurate, and dedicated individual in her university work, laboratory duties, and scientific research. I would encourage her to continue her research in the field by broadening her collaborations with international scientists. I am confident that Dr. Levkova possesses an undeniable potential for leadership and active, equal collaboration in research projects within the international scientific community.

Conclusion

In conclusion, I am confident that the documents and supporting evidence provided by Ch. Assist. Prof. Mariya Levkova, MD, PhD, meet the requirements set by the Medical University of Varna for the competition. They also fully satisfy the scientometric requirements for the academic position “Associate Professor”. Dr. Levkova’s demonstrated scientific research, teaching, medical, and diagnostic activities, along with her personal qualities, lead me to give a “**positive**” assessment with conviction of her candidacy. I propose to the Scientific Jury to confer the academic position “Associate Professor” in the scientific specialty of “Medical Genetics” professional direction 4.3. *Biological Sciences* in the field of higher education 4. *Natural Sciences, Mathematics, and Informatics* for the needs of the *Department of Medical Genetics*, Medical University of Varna, and the *Laboratory of Medical Genetics* at UMBAL “St. Marina” of **Ch. Assist. Prof. Mariya Kostadinova Levkova, MD, PhD.**

Date:

02/19/2024

Signature:

(Assoc. Prof. M. Radanova, PhD)

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