

**TO**  
**THE CHAIRMAN OF THE SCIENTIFIC JURY,**  
DETERMINED BY ORDER NO. RD-21-331/15.02.2023  
OF THE RECTOR OF PLOVDIV UNIVERSITY "PAISIY HILENDARSKI"

**REVIEW**

**by Professor Slavi Dimitrov Delchev, MD, PhD**  
**from the Department of Anatomy, Histology and Embryology**  
**of Medical University - Plovdiv**  
**elected member of the Scientific jury**

**Regarding:** Conducting a procedure for the selection of a "Professor" in the area of higher education 4. Natural sciences, mathematics and informatics, Professional direction 4.3 "Biological Sciences" specialty " Morphology ", announced in SG no. 92/18.11.2022 for the needs of the Department of Developmental Biology at the Faculty of Biology.

**I. General description of the submitted materials for the competition.**

In the competition for "Professor", announced in the State Gazette, no. 92 of 18.11.2022 and on the website of the University of Plovdiv "Paisiy Hilendarski" for the needs of the Department of Developmental Biology at the Faculty of Biology, as a candidate Associate Professor Elenka Stoilova Georgieva, MD, PhD from the Department of Developmental Biology at the Faculty of Biology submitted documents. The set of paper and electronic materials presented by Associate Professor Elenka Georgieva is in accordance with the Regulations for the Development of the Academic Staff of the PU, and includes the following documents:

1. Application to the Rector for participation in the competition
2. Professional curriculum vitae (EU model)
3. Copy of master's degree diploma
4. Copy of diploma for ONS "Doctor"
5. Copy of the contract for the position of "Associate Professor"
6. List of scientific publications
7. Copies of scientific publications
8. Certificate of compliance with minimum national requirements
9. Declaration of originality and authenticity
10. Annotations of the materials under Art. 76 of PRASPU (in Bulgarian and a foreign language)
11. Self-assessment of contributions
12. List of citations
13. Work experience document
14. Documents for study and teaching work
15. Documents for scientific research activity
16. Reference regarding additional requirements of the relevant faculty

17. Other documents
18. Paper documents – 4 pcs.
19. Set of documents on electronic media - 8 pcs.

The materials provided to me were of high quality of the copies recorded on electronic media.

The candidate Associate Professor Elenka Georgieva has submitted a total of 47 scientific works, of which 1 book chapter, 1 monograph, 3 textbooks and study supplements. A total of 44 scientific papers (publications) that are outside the dissertation are accepted for review; 3 study supplements and 14 research projects. The distribution of scientific works by relevant headings, in the country and abroad, is described below. Documents (in the form of official notes) for participation in commissions and scientific juries of competitions are also presented.

The documents are comprehensive, reliable and correctly presented, without any comments on my part.

## **II. Brief biographical data of the candidate**

Associate Professor Elenka Georgieva graduated from the Medical Institute (Medical College) in 1981, and in 1991 she graduated with a Master's degree in Biology from Plovdiv University "P. Hilendarski". In 1993, he started working as an assistant and then became a senior and, accordingly, chief assistant in the Department of General Biology at PU "P. Hilendarski" until 2010. In 2005, it acquired ONS "Doctor". Since 2010, she has been elected as an "Associate Professor" at the Department of Developmental Biology at the Faculty of Biology of the PU.

## **III. General characteristics of the applicant's activity**

### *Assessment of educational and pedagogical activity*

Associate Professor Elenka Georgieva actively participates in teaching activities for the Master's degree program at the "P. Hilendarski", for ONS "Doctor" as supervisor of doctoral students and for work with graduates in specialties from OCS "Bachelor" and OCS "Master". The applicant's total number of lecture and seminar hours for the past six years significantly exceeds the required annual minimum. Associate Professor Georgieva led lectures and exercises at PU "P. Hilendarski", as well as in the branches of the PU - in the town of Kardzhali and the town of Smolyan (a total of 3042 hours for the PU and 1080 hours for the branches).

According to the additional requirements of the Faculty of Biology, the candidate has: issued 2 textbooks and 1 guide, 4 successfully defended doctoral students, 29 years of teaching experience, is a participant in 4 national projects, participated in the preparation of the accreditation procedure for the Bachelor of Science in Biology, OCS "Master" in Reproductive Biology, ONS "Doctor" in doctoral program "Morphology", participated in institutional accreditation of the "Developmental

Biology" department. As the head of the department, Assoc. Prof. Georgieva participated in the preparation of study plans, individual study plans, scientific reports of the teachers; she took part in a number of committees - ethical, attestation, coordinator of the OCS "Master" in Reproductive Biology, as well as many other activities related to administrative work. She is a member of the editorial board of the scientific journal JBB (published by the BF at the PU), she is the chairman of the Biology section at SUB - Plovdiv, and she was the chairman and member of scientific juries at various universities in the country. Participates in the organization and conduct of the candidate-student campaigns as the chairman or member of the inspection committees. She was awarded a diploma for her personal contribution to the development of the PU.

#### *Evaluation of the candidate's scientific and scientific-applied activity*

The candidate Associate Professor Georgieva has submitted a monograph that meets the content and volume requirements. A chapter from a collective monograph is also presented.

Associate Professor Georgieva has a high publication activity in specialized journals. Among those in which most of her articles have been published, stand out renowned publications with an impact factor such as: Biomedicines (Q1), Helion (Q1), Comparative Biochemistry and Physiology (Q1), Toxics (Q1), Water (Q2), Journal of Zoology, Ecologia Balkanica, Journal of Environmental Protection and Ecology, Folia Biologica, Journal of Dental and Medical Sciences, Acta Zoologica and others.

Publications can be classified by type: articles – 43 issues; by importance: articles in journals with an impact factor - 20 issues; by quartiles: Q1 – 4 pcs., Q2 – 3 pcs., Q3 – 8 pcs., Q4 – 9 pcs.; by place of publication: a) articles in refereed international journals (Scopus and Web of Science) – 35 issues; according to the language in which they were written: in English – 42 issues (the monograph and the book chapter are in Bulgarian); by number of co-authors: individual – 1 number; with one co-author – 1 issue; with two co-authors – 1 issue; with three or more co-authors – 42 issues; reports in works of national and international scientific conferences - 40 issues. When checking the Scopus database, it becomes clear that the candidate's H-index is 11. This is an extremely high result of an internationally recognized objective indicator, which clearly shows the level of her scientific works.

From the materials submitted for the competition, it is evident that the candidate's total impact factor of 20 articles is 34.812 and SJR – 8.871, which are also an objective indicator of the high quality of her scientific production.

Associate Professor Georgieva is a co-author in 11 projects and head of 3 projects in the last ten years. Two of the projects were financed by the "Scientific Research" Fund of the Ministry of Education and Science, 10 were financed by the PU "P. Hilendarski", and two are for operational programs.

The activities of the candidate listed above in projects of different scale and scientific direction show her ability to organize and lead research activities. Her work as a leader of three scientific projects and as a team member of another 11 projects is evidence that she possesses the necessary qualities for successful coordination and team management.

Indicators	Minimum requirements	Assoc. Professor E. Georgieva
A) Indicator 1, Dissertation work for the award of ONS "Doctor".	<b>50 pts.</b>	<b>50 pts.</b>
B) Indicator 4. Habilitation work	<b>100 pts.</b>	<b>100 pts.</b>
Г) Indicator 7. Scientific publication in publications that are referenced and indexed in world-renowned databases with scientific information (Web of Science and Scopus), Indicator 8. Chapter of a book	Indicators 7 and 8; <b>200 pts.</b>	Q1 – 4 x 25 = 100 Q2 – 3 x 20 = 60 Q3 – 8 x 15 = 120 Q4 – 9 x 12 = 108 Total: <b>388 pts.</b>  Total: <b>15 pts</b>
Д) Indicator 10. Citations in scientific publications, referenced and indexed in world-renowned databases of scientific information 1 quote = 2 pts.	<b>100 т.</b>	By indicator 10: 352 citations x 2 pts. = <b>704 pts.</b>
E) Indicators <b>from 12 to 20</b>	<b>150</b>	<b>286.2 pts.</b>
<b>Total points</b>	<b>600</b>	<b>1543.2</b>

It is evident from the attached table that the scientific production of the candidate fully covers and exceeds all the indicators of the minimum requirements of PU "P. Hilendarski" for occupying the academic position of "Professor".

*Contributions (scientific, scientific-applied, applied) and citations*

The contributions of Associate Professor E. Georgieva are in the following main areas:

**1. Contributions of a theoretical nature.**

In the area of experimental morphology - analysis of ghrelin as an ontogenetic factor and hormone of the gastrointestinal tract in prenatal and postnatal periods in rats; study of serum leptin and resistin after drug administration to mice with collagenase-induced osteoarthritis.

**2. Contributions of an applied nature.**

In the area of biology - application of a multi-biomarker approach for the analysis of changes in the gill and liver of fish, studies of mussels as bioindicators in toxicological studies and programs for integrated monitoring.

In the area of medicine - evaluation of the expression of leptin, NGF and adiponectin in women with metabolic syndrome; application of nutritional supplements to improve the sperm status of infertile men and in patients after varicocelelectomy.

In the area of educational activity - two textbooks and one manual for students of various specialties have been issued.

The monographic work of Associate Professor E. Georgieva is an in-depth study of human infertility. The complex reasons for the development of this disease in men are examined - external and internal factors. The types of treatment and approaches to solving this serious problem are discussed at length. A particularly interesting aspect is the application of micronutrients, antioxidants, and vitamins for a strong and rapid positive effect on the level of male fertility. Also presented is an original study of a large number of men (220) with sub/infertility and those with varicocele after taking a multi-component nutritional supplement for three months. The changes in conventional sperm parameters and sperm chromatin state were monitored. Data from the extensive study showed that combined treatment with varicocelectomy and the use of the nutritional supplement exceeded the results of the surgical procedure alone. The results when taking the supplement in smokers are also encouraging when taken for a period longer than three months. Research in this area is up-to-date and very valuable to reproductive health professionals.

*Significance of the contributions and reflection of the results in the works of other authors.*

The numerical indicators of the presented citations of the candidate's works at the time of the competition are a total of 407, as in Scopus and Web of Science – 352. The observed citations are in the area of the scientific activity of Assoc. Prof. Georgieva, the citing authors are mainly foreign; citations are outside the teams in which the candidate participates and are not used for other procedures.

The recognition of the candidate among the scientific circles at home and abroad based on the cited citations is indisputable.

#### **IV. Assessment of the candidate's personal contribution**

The presented set of documents convincingly proves the personal contribution of Associate Professor E. Georgieva both in the scientific and teaching activities of the department, also at the level of PU "P. Hilendarski", and among the international scientific community.

Her personal contribution to scientific research work is definite and is documented through the presentation of 26 scientific publications, of which she is the lead author, in 1 of them she is the independent author, in 11 publications she is the second author, and in 7 she is the last author.

#### **V. Critical remarks and recommendations**

I have no objections to the scientific works and materials presented by the candidate. The field of scientific interests of Associate Professor E. Georgieva is focused on the field of biology and medicine, which gives an excellent perspective for the further development and enrichment of scientific research.

#### **VI. Personal impressions**

Associate Professor E. Georgieva is a scientist and teacher with indisputable authority, both at the national level and abroad. Her teaching, scientific, administrative, and public activities are highly appreciated and are an integral part of the life of Plovdiv University "P. Hilendarski".

## CONCLUSION

The documents and materials presented by the candidate, Associate Professor Elenka Georgieva, **meet all the requirements** of the Law on the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB), the Regulations for the Implementation of ZRASRB and the relevant Regulations of PU "Paisiy Hilendarski".

The candidate in the competition has submitted a sufficient number of scientific works published after the materials used in the defence of the ONS "Doctor" and academic position "Associate Professor". The candidate's works contain original scientific and applied contributions that have received international recognition, a representative part of which has been published in authoritative journals issued by international academic publishing houses. Her theoretical developments have practical applicability, and some of them are directly oriented to academic work. The scientific and teaching qualifications of Associate Professor Elenka Georgieva are unquestionable.

The results achieved by Associate Professor Elenka Georgieva in the educational and research activities **fully correspond** to the minimum national and additional requirements of the Faculty of Biology, adopted in connection with the Regulations of the PU for the application of the ZRASRB.

After getting acquainted with the materials and scientific works presented in the competition, analysing their significance and the scientific, scientific-applied and applied contributions contained in them, I find it reasonable to give my **positive assessment** and **to recommend** the members of the esteemed Scientific Jury **to support** her and to prepare a report-proposal to the Faculty Council of the Faculty of Biology for the selection of Associate Professor Elenka Georgieva, MD, PhD for the academic position of "Professor" at PU "Paisiy Hilendarski" in: area of higher education 4. Natural sciences, mathematics and informatics, professional direction 4.3 Biological sciences (Morphology).

April 10. 2023

**Prepared the review:** .....

Professor Slavi Delchev, MD, PhD