

STATEMENT

FROM: Assoc. Prof. Dr. Veselina Svetoslavova Moskova-Doumanova, Faculty of biology, Sofia University "St. Kliment Ohridski "

ABOUT: the materials submitted for participation in a competition for the academic position of "Associate Professor" in the professional field 4.3. Biological Sciences (Microbiology)

1. General presentation of the procedure and the candidate

The competition in professional field 4.3. Biological Sciences (Microbiology) for the needs of the Laboratory "Cellular Microbiology", Department of "General Microbiology", has been announced in the State Gazette, issue 12 /12.02.2021. My participation in scientific jury is in accordance with order № I-30 / 29.03.2021 of the Director of IMiKB - BAS. For participation in the competition documents are submitted by one candidate - Chief Assistant Professor Dr. Tsvetelina Paunova-Krasteva.

Dr. Paunova-Krasteva is a graduate of the Faculty of Biology at Sofia University "St. Kliment Ohridski", where in 2005 completed a master's program in Microbiology and Microbiological Control. Shortly afterwards, she started working at IMiKB, where she still works, successively passing through the positions of biologist, assistant and chief assistant professor. Since 2005 she is constantly increasing her expertise through specializations abroad and participation in a number of training courses.

The professionalism and the high level of the scientific work of Dr. Paunova-Krasteva are evidenced by the awards given to her at Bulgarian and international scientific forums.

2. Fulfillment of the requirements for holding the academic position "Associate Professor"

To participate in this competition, Dr. Paunova-Krasteva has presented a list including 22 publications, of which 19 are in referenced and indexed journals and 3 book chapters. In addition, the candidate's scientific output includes 8 more publications in other journals. In most of the publications she is the first or corresponding author. The publications and book chapters submitted for the competition meet the requirements of the Law for development of the academic staff in Republic of Bulgaria and the regulations for its application, and cover the minimum state requirements for holding the academic position of "Associate Professor" in professional field 4.3. Biological sciences, as well as the additional criteria of IMiKB. The implementation of the individual groups of indicators is as follows:

Group A – 50 points (PhD thesis "PHENOTYPIC VARIATIONS RELATED TO POLYSACCHARIDE ANTIGENS IN ESCHERICHIA COLI O157", 2015);

Group B - 120 points (100 points required) 6 publications in refereed and indexed journals are presented, each of which falls in Q2. All publications are in the main field of the candidate's work - Bacterial biofilms, and were published in the period 2007-2020.

Group G - 264 points (required 200 points according to Law or 220 points according to the criteria of IMiKB). There are 13 publications presented, of which 1 is Q1, 4 is Q2, 6 is Q3 and 2 is Q4. They are in two thematic fields - Phenotypic variations in microorganisms and Cellular interactions between pro- and eukaryotes. Dr. Paunova-Krasteva is a co-author of three book chapters, for which a complete bibliography is provided.

Group D – 126 points (required 100 points according to Law or 120 points according to the criteria of IMikB). According to the requirements of Law, a list of 63 citations is presented, from the internationally recognized databases Scopus and Web of Science, which does not include auto-citations of any of the co-authors. An up-to-date reference in these databases shows that as of May 20, 2021 the real number of citations of Dr. Paunova-Krasteva is higher - 66 according to Scopus and 77 according to Web of Science. Additionally, a complete list of citations is presented, according to the additional criteria of IMikB, with 111 citations, including citations in Theses and in journals referred to in other databases.

Group E - although this indicator is not included in the minimum state requirements for the academic position of Associate Professor, Dr. Paunova-Krasteva has provided information for participation in the team or as a manager of a number of national and international projects, as well as for attracted funds, equal to a total of 338 points.

As can be seen from the submitted documents, Dr. Paunova-Krasteva not only covers but also significantly exceeds the Minimum State Requirements, as well as the increased requirements of IMikB (Impact Factor 22,091 and h-index 6) for the academic position of Associate Professor.

3. Evaluation of the candidate's activity

3.1 scientific activity

Dr. Paunova-Krasteva's scientific research is in several areas, the main of which is "Bacterial biofilms - development, structural and functional characteristics, inhibition". She is one of the founders of this scientific field in Bulgaria. Some of the presented research are fundamental, related to the mechanisms of biofilm formation and the factors that influence it. Another part is of a more applied nature, such as studies of clinical isolates of clinically relevant microorganisms, the establishment of an experimental scheme for testing of new substances as putative anti-biofilm effectors, and the study of the possibilities of applying polymer micelles for destruction / loosening of biofilms, with a respect to their successful treatment. The work in this area is reflected in a total of 7 scientific publications, including 6 in refereed and indexed journals with a total impact factor of 9,792.

Another major part of Dr. Paunova-Krasteva's work is related to the identification of phenotypic variations in different microorganisms, mainly their surface molecules and the importance that these variations have on some physiological characteristics of microorganisms (as survival, interaction with the host or formation of microorganism communities). Among her other achievements in the field, Dr. Paunova-Krasteva was part of a team that isolated and identified a new type of cyclic forms of ECA from *E. coli* O157: H (-), and participated in their characterization and analysis of their biological significance. The results of the research in this field are reflected in 10 publications, half of which are in referenced and indexed journals with a total impact factor of 4,402, and in three book chapters.

Although the main object of Dr. Paunova-Krasteva's research are microorganisms, they are not the only one. An extremely interesting area in the work of the candidate is the study of the interaction between prokaryotes and eukaryotic cells. Data of a fundamental nature are obtained, related to the type of bacteria adhesion, structural and functional studies of microorganisms and molds in normal conditions and after exposure to stressors. Other part of the

studies with more applied orientation, provide new information about the molecular mechanisms underlying the interaction between cells, their biological role and significance. As particularly important from a bio-medical point of view, I can highlight the studies of clinical isolates of *P. aeruginosa* from patients with cystic fibrosis, as well as studies on the role of dietary supplements for bacterial colonization in a model of intestinal epithelium. In this area are 13 of the candidate's publications, including 8 referred to and indexed with a total impact factor of 7,897.

All these scientific achievements would not be possible without the active work of the candidate for the development and introduction of new experimental techniques and approaches. As a member of the team, and later as head of the Laboratory of Cellular Microbiology, Dr. Paunova-Krasteva alone or in partnership with other researchers works on the modification and standardization of methods for studying various cellular parameters through the classical electronic and light microscopy, as well as confocal laser scanning microscopy and expression analysis.

3.2. teaching activity

Apart from being an established researcher, Dr. Paunova-Krasteva is also a very good teacher. My personal observations are from her work with the students at Master's Programme "Cellular Biology and Pathology" of BF, where she teaches in the courses "Cellular Pathogens" (practical classes) and "Methods of electron microscopy, cytochemistry and immunohistochemistry" (practical classes). In her work she skillfully manages not only to teach students of the study material, but also to pass on her rich practical experience, making the classes extremely attractive and useful for them. In addition, as a mentor in the Student Practices program, she passes on her extensive experience to undergraduate students. Dr. Paunova-Krasteva is also the supervisor of two successfully defended Diploma theses.

4. Conclusion

The overall activity of Ch. Assistant Professor Dr. Tsvetelina Paunova-Krasteva and her scientific indicators meet the requirements of the Law for development of the academic staff in Republic of Bulgaria and the regulations for its application, as well as the Regulations of the Institute of Microbiology for the academic position "Associate Professor". This gives me reason to recommend to the esteemed Scientific Jury and to the members of the Scientific Council to support the candidacy of Ch. Assistant Professor Dr. Tsvetelina Paunova-Krasteva for holding the position of "Associate Professor" in the Professional field: 4.3 Biological Sciences (Microbiology).

May 26th 2021

Sofia

assoc. prof. V. Moskova-Doumanova