

OPINION

On the Competition for Academic Position "Associate Professor" at the Stephan Angeloff Institute of Microbiology, BAS, field of higher education 4.3. Biological sciences, scientific specialty Microbiology - Microbial degradation of toxic environmental pollutants, State Gazette 29 of 12 April, 2022, for the Department of General Microbiology, Laboratory Microbial Genetics

Prepared by Assoc. Prof. Stoyanka Rangelova Stoitsova, PhD, member of the Scientific Jury according to Order № I 69/30.05.2022 of the Director of the Stephan Angeloff Institute of Microbiology, BAS

Documents for the competition have been submitted by one candidate, Maria Gerginova Gerginova, PhD

As a Member of the Scientific Jury, I here state that I have no joint publications within the list considered for the present competition.

Carrier development of the candidate

Dr Gerginova's motivation to work in natural sciences dates back to her early years and her choice to study in the National High School of Natural Sciences and Mathematics. She completed this high school with a degree "Biologist". Her education (1988-1993) continued at the Faculty of Biology, Sofia University St Kliment of Ohrid, where she acquired Master's degree in "Biotechnological Processes". Her further carrier development was entirely at the Institute of Microbiology, BAS. She started as "Specialist" at the Department of Biosynthesis of Organic Acids (1993-1996), and since 1996 she is a Research Assistant at the Department of Microbial genetics.

The CV of the candidate together with the entire documentation for this competition, illustrate a professional and scientific development related with the acquisition of skills and knowledge for complex research on the microbial degradation of toxic environmental pollutants. The applied documentation evidences that the application of Dr Gerginova is *entirely in accordance with the topic of the present competition.*

Main directions in the candidate's research

The accumulation in the environment and the waters of a number of xenobiotics, especially the aromatic hydrocarbons, represents not only a risk for human health but for the future of

mankind as well. The focus of the entire research activities of Dr Gerginova that are included for evaluation within the present competition, is on the possibilities for biodegradation of these pollutants. The studies may be subdivided into three interlinked directions:

(1) Biodegradation of toxic chemical compounds by bacteria, yeasts and filamentous fungi; (2) Analysis of enzymes directly involved in the degradation of aromatic and polyaromatic compounds; (3) Identification of microorganisms and genes that code enzymes with catabolic activity related with the decomposition of aromatic xenobiotics. As one gets acquainted with the objectives and tasks within these research directions, it is noted that the planning and performance of the individual studies may as well involve wider range of questions. Hence some of the publications, with equal weight, may be classified to belong together to each of the three of the outlined directions (see items 11, 19, 26 and 38 in the List of publications, Document 14) or two (items 5, 8 and 14 of the same Document) of the above described directions.

The entire volume of the publications, predominantly published in impact factor journals, prove the high degree of the knowledge and the research experience of the candidate in accordance with the objectives of the present competition.

Research publications and fulfillment of the criteria for academic position

"Associate Professor"

- *Requirements in accordance to the Law for Development of the Academic Staff (LDAS)*

Criterion "A" - Abstract is submitted of the PhD Thesis on "Investigation on the processes of phenol biodegradation by yeasts *Trichosporon cutaneum* R57"

"B" Group criteria: The candidate presented a total of 5 research papers (1 with Q1, 3 with Q2, 1 with Q3). The summary credits on this criterion is 100, completely in accordance with the Regulations for the LDAS application in the Republic of Bulgaria.

"G" Group criteria: 13 papers are included (1 with Q1, 8 with Q2, 2 with Q3, and 2 with Q4). According to the credit system for Life Sciences, these publications account to 239 credits thus substantially exceeding the requirements of the National Regulations (200 credits) and these of BAS and the Institute of Microbiology (220 credits).

"D" Group criteria: The candidate has submitted a list of 289 citations (self-citations excluded), available in Web of Science or Scopus which account for 578 credits thus substantially exceeding the requirements of the Regulations for the LDAS.

"E" Group criteria, i.e., participation in research projects, is not a requirement for the academic position "Associate Professor". Nevertheless, I would like to comment on the list of projects, see Appendix 8 of the files for the present competition. Dr Gerginova has been the supervisor of 1 research project and participated in 11 others - 1 international, 1 within Operation Program for Intelligent Development, and 10 national. In my opinion, while not an ultimate requirement, criterion "E" is essential for the evaluation of the candidate. Nowadays, the capabilities for team working, and within project funding (including - as a supervisor) are a serious objective for the successful work of an Associate Professor. The candidate has good experience as a member of the team of the Department of Microbial Genetics under the supervision of Dr Z. Alexieva. My personal attitude is that Dr Gerginova, as a major participant in these projects, has acquired the good tradition and experience of this team, as well as competitiveness in the search and finding of funds.

- *Additional requirements* according to the Regulations for the acquisition of scientific degrees and academic positions of the Stephan Angeloff Institute of Microbiology.

After the completion of her PhD Thesis Dr Gerginova has been the co-author of 19 research papers in IF-journals, and 6 book chapters and full-text publications of reports presented at international scientific meetings. Thus the requirement for 20 publications not included in the PhD thesis is fulfilled. In 7 of these publications the candidate is the leading author (requirement: 5). The total number of citations is 289 (minimum requirement:100). The IF of the publications included in this competition is 23.454 (minimum requirement: 20). The minimum requirement for project participation (3) is also exceeded (a list of 12 projects is attached).

Summing up, the scientific metrics of Dr Gerginova *exceed substantially both the national and the additional requirements* for academic position "Associate Professor".

Conclusion

LDAS and the Regulations for its application put forward "minimal" requirements. The entire documentation within this competition evidences that Dr Gerginova's achievements are not just "in accordance with" but are substantially exceeding the quantitative criteria of the National and Additional regulations for the aquisition of the title Associate Professor. The research of the candidate is characterised by depth, a strive for complex solutions and good-impact publications. Together with her research experience, Dr Gerginova is working in accordance with the good practices and traditions for team working characteristic for the Laboratory of Fungal Gentic. I strongly support Dr Maria Gerginova's application to this competition. I would like to recommend to the Scientific Jury to propose to the Scientific Council of the Institute of Microbiology the appointment of Dr Maria Gerginova as "Associate Professor" in 4.3. Biological sciences, scientific specialty Microbiology - Microbial degradation of toxic environmental pollutants.

16.08.2022.

Sofia

/Assoc.Prof. S. Stoitsova, PhD/