

REPORT

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Regarding the documentation submitted for participation in the competition for the occupation of the academic position “Associate Professor” in the field of Higher education 4. Natural sciences, mathematics and informatics, Professional field: 4.3.Biological Sciences (Microbiology), for the needs of the Institute of Microbiology at BAS, Department „Infectious Microbiology“, Lab „Cytotoxicity and signal transduction“ announced in the State Gazette no. 47 of 22.05.2020.

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Elected as a member of the Scientific Jury, in compliance to Order № I-83 / 01.07.2020

1. General assessment of the presented documentation

A single candidate has applied for the Contest for Associate Professor, published in State Gazette, no. 47 of 22.05.2020, namely senior assistant professor Maya Zaharieva, PhD, affiliated at the Institute of Microbiology, BAS. The presented in printed and electronic formats set of documents is in full compliance to the Institute of Microbiology Academic Development Policy Regulation, and conversely meets the IMB-BAS institutional criteria for lending the academic position of associate professor, as well as the minimal quantitative requirements determined in the relevant national legislation.

A comprehensive list and copies of publications and reports that have been classified in accordance with the relevant regulatory framework as follows - publications affiliated with the habilitation work, respectively publications outside the formal habilitation work, book chapters and abstracts of scientific papers presented at conferences, as well as a list of scientific projects are presented. Eleven of the submitted publications are included in the habilitation report in list "B" (i.e. habilitation work - scientific publications in publications that are referenced and indexed in world-renowned scientific information databases in which the candidate is listed as author of correspondence. In addition to the habilitation work, there are also 14 publications from List D (Scientific publication in publications that have been referenced and indexed in world-renowned databases of scientific information, outside the habilitation work). Within the framework of indicator 8 criteria the applicant also presents three chapters of monographs. Dr. Zaharieva is also a co-author of three full-text articles published in conference proceedings.

Of the total of 11 full-text publications included in the habilitation work 9 have a JCR/WoS impact factor and regarding the quartile (Q) classification are distributed as follows: 6 in Q1, 1 in Q2,

and 4 in Q3, respectively. Twelve of the 14 submitted articles outside of the applicant's habilitation work have a Thomson Reuters/Clarivate Analytics IF. The distribution of these publications among the quartiles is as follows - Q1 (3), Q2 (7), Q3 (1), Q4 (1). Also presented are 3 book chapters of which Senior Assistant Prof. Maya Zaharieva is the sole author. The cumulative impact factor of publications is 45.724.

The candidate is the leading author in 7 of the publications submitted for the competition, incl. among the articles with JCR-IF (the first place in one article is shared with another co-author); in 1 chapter of a book and in 1 article in a congress proceedings book.

The applicant's research work is disseminated also in the form of a significant number (given the relatively short period of time) of scientific reports presented at conferences and congresses - a total of 36 in Bulgaria and abroad.

Senior Assistant Professor Maya Zaharieva has also presented a reference for participation in 14 research projects, incl. authoritative international projects, in 3 of which she is a leader or coordinator.

A reference to the citations of the scientific works of Sen. Assistant Professor Dr. Maya Zaharieva shows 235 citation scores as of July 2020. The candidate's Hirsch index is 9, according to a reference in Scopus scientific database. Other materials are included in the presented set of documents, in accordance with the criteria formulated by the legislation.

2. Brief biographic outline

Maya Zaharieva was born on July 26, 1975. She studied pharmacy at the Faculty of Pharmacy of the Medical University - Sofia, in the period 1996-2001, graduating with a master's thesis in the field of oncopharmacology at the Department of Pharmacology, Pharmacotherapy and Toxicology. The experimental work on the master's thesis was developed at the Deutsches Krebsforschungszentrum in Heidelberg, with a MSc graduates scholarship from the Erasmus/Socrates program. In the period 2003-2006 Maya Zaharieva developed her doctoral thesis in the same department, and in 2004-2005 she was a fellow of the DAAD program in Heidelberg. In the period 2002-2003 she worked as a specialist in the CytoNet Center for transplantology. As a young postdoctoral research fellow, she led a project under Alexander von Humboldt's exchange and resident program in Heidelberg.

In 2012 she worked as an assistant in pharmacology at the Medical Faculty of the University of Sofia.

She started her academic carrier at IMB-BAS in 2012 after winning a competition for an assistant professor position. Since 2014 she has held the position of senior assistant professor in the same scientific organization.

3. General assessment of the candidate's activities

The results of the research projects realized with the participation of Maya Zaharieva have been appropriately disseminated in the scientific literature, in the form of both real full-text scientific

publications in peer-reviewed scientific journals and in the form of an impressive number of scientific reports presented at specialized conferences and congresses. The quartile distribution pattern of the publications was summarized in the previous section of the review.

The scientific developments of the candidate, presented in the provided publications and scientific communications, are concentrated in several directions, which can be summarized as follows:

1. Evaluation of the antineoplastic activity, cytotoxicity and signal transduction modulation of extracts, biologically active substances (lignans, phloroglucinols, polyphenols, saponins) and synthetic compounds in malignantly transformed cell lines with quantification and definition of equieffective concentration end-points and concomitant pharmacodynamic studies to identify the intracellular signaling pathways that comprise the ultimate pharmacological targets of the tested compounds.

2. Antimicrobial activity of plant extracts, purified BAV from various plant taxa, as well as human neutrophil peptides (defensins).

3. Toxicological analysis of compounds and extracts with antineoplastic and antimicrobial activities in various in vitro test systems and in vivo experimental models.

4. Modeling of malignant cell proliferation and metabolic activity in bacteria with mathematical software MAPLE as well as testing, validation and comparative evaluation of different algorithms for generating dose-response curves, calculation of the equivalent endpoints, as well as the occurrence of synergism or antagonism in combined application.

4. Evaluation of the personal contribution of the candidate

As can be seen from the number of publications in which the candidate is an independent, first author or corresponding author, as well as from the several large-scale projects of which he is the coordinator, in my opinion it is beyond any doubt that Sen. Assistant Professor Dr. Zaharieva is an ambitious young scientist with a leading or significant contribution to the presented research activities and potential for coordinating collaborative research projects, generating ideas and designing experiments on the profile of the competition.

5. Critical notes and recommendations

The applicant's document set have been compiled excellently, in addition, practically all the presented evidence for research activity, incl. publications, abstracts from congresses and projects are in the profile of the professional field and further the scientific specialty and significantly exceed the minimum quantitative criteria set in the normative documents.

6. Personal impression

I know personally Sen. Assistant Professor Dr. Maya Zaharieva in my capacity as a lecturer in pharmacology and pharmacotherapy at the Faculty of Pharmacy at the Medical University of Sofia. The review of the documents presented in the competition confirms my positive impressions of the candidate as a hard-working, ambitious and capable young scientist, with impressive erudition, practical experience and science-metrics indicators. Dr. Zaharieva is practically a polyglot, with a proficient philological training in German and English, using also Russian and French.

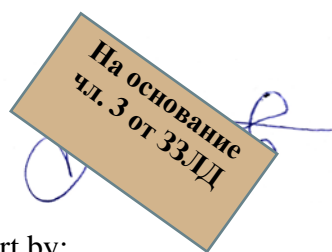
CONCLUSION

Based on the materials submitted in the competition by the candidate Sen. Assistant Professor Maya Zaharieva, I believe that it meets the quantitative criteria for holding the academic position of "Associate Professor", laid down in the relevant legislation, namely the Law on the Development of Academic Staff in the Republic of Bulgaria and the corresponding institutional regulations for application of the aforementioned law at BAS and the IMB.

The candidate is a prominent researcher who demonstrates a high level of proficiency, application and optimization of modern methods and approaches in the fields of cell culture, molecular pharmacology, in vitro screening and biochemical and pharmacological characterization of natural and synthetic biologically active substances with antitumor and antimicrobial activity. Sen. Assistant Professor Dr. Maya Zaharieva undoubtedly has a leading contribution to the presented developments, research projects and publications, presenting herself convincingly as an authoritative and promising young researcher.

Taken together the documentation set and the scientific papers submitted by the candidate, the analysis of their significance and the reference for the respective scientific, scientific/applied and applied contributions, give me reason to conclude a convincingly positive assessment and to recommend to the Scientific Jury to prepare a report-proposal to the Scientific Council of IMB-BAS for inauguration of Dr. Maya Zaharieva in the academic position "Associate Professor" in the field of higher education 4. Natural sciences, mathematics and informatics, professional field 4.3. Biological sciences (Microbiology).

Sofia, September 1st 2020



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