

OPINION

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SU "St. Kliment Ohridski "

of the materials submitted for participation in a competition for the academic position of 'Associate Professor' of Plovdiv University "Paisii Hilendarski" in the field of higher education 4. Natural Sciences, Mathematics and Informatics; professional field 4.3. Biological sciences (Molecular biology).

In the competition for 'associate professor', announced in the State Gazette, issue 99 of 20.11.2020 and on the website of Plovdiv University "Paisii Hilendarski" for the needs of the Department of Plant Physiology and Molecular Biology, at the Faculty of Biology, as candidates participate Chief Assist. Dr. Elena Dimitrova Apostolova-Kuzova and Chief Assistant Dr. Tihomir Iliev Vachev from the Department of Plant Physiology and Molecular Biology, BF-PU

1. General presentation of the procedure and the candidates

By order № P33-630 of 19.02.2021. of the Rector of Plovdiv University "Paisii Hilendarski" (PU) I have been appointed a member of the scientific jury of a competition for the academic position of 'associate professor' in PU in the field of higher education 4. Natural sciences, mathematics and informatics, professional field 4.3. Sciences, scientific specialty "Molecular Biology", announced for the needs of the Department of Plant Physiology and Molecular Biology, at the Faculty of Biology.

For participation in the announced competition have submitted documents Chief Assistant. Dr. Elena Dimitrova Apostolova-Kuzova and Chief Assistant Dr. Tihomir Iliev Vachev from the Department of Plant Physiology and Molecular Biology, BF-PU

The review of the documents shows that the procedure for opening and announcing the competition has been followed. The presented sets of materials on electronic media are prepared in accordance with the requirements of the Law for Development of the Academic Staff in the Republic of Bulgaria (RLDASRB), the Regulations for its application and the internal regulations of the University and meet the criteria for acquiring the academic position "Associate Professor".

The candidate chief assistant Dr. Elena Dimitrova Apostolova-Kuzova presented a list of a total of 38 scientific papers, 9 of which are related to obtaining a PhD and the position of assistant professor. An abstract of the doctoral dissertation is also presented. Dr. Kuzova participated in the current competition with a total of 29 scientific papers, of which: 14 publications with IF (total IF - 26,991); 5 publications with SJR (total SJR- 11,867); 3 publications in journals without IF and IR; 2 publications in conference proceedings; 3 chapters from books and 2 scientific manuals. A list for participation in 12 scientific developments (5 funded by the Ministry of Education and Science, 2 - international, 3 SRF, PU and 2 AU-Plovdiv) is given. Documents certifying the publication are presented. A general list of publications is presented, in which previous procedures are distinguished. The table intended for NACID contains the necessary information concerning

the publications and their corresponding quartiles. Summaries of the articles in Bulgarian are also presented.

The candidate chief assistant Dr. Tihomir Iliev Vachev presented a total of 41 scientific papers. Of these, 10 publications are related to the acquisition of both PhDs and the position of assistant professor. Two abstracts from the doctoral dissertations are presented. There is also an abstract for the degree of "Doctor of Science", but there is no certificate of recognition, so it is not respected. In this competition Dr. Vachev participated with a total of 31 scientific papers, of which: 9 publications with IF (total IF 7.602; 5 publications with SJR (total SJR 4.11); 2 publications in journals without IF and IR; 5 publications in collections of conferences, 2 chapters of books, 3 scientific manuals, 1 monograph and 2 books based on dissertations. The submitted documents and the NACID table also contain the title of a textbook, but no one is attached. In the submitted documents there are 7 chapters of books, but 5 of them are from a collection of conferences and a jubilee collection and do not have the character of chapters from books. The evidence for the publications lacks publications under number 7.8, and there are only notes from the publishing house of BAS that they have been accepted for publication. The number of publications should be reduced by 2 (2 with IF), and book chapters by 5. The NACID table should be corrected. Dr. Valchev has participated in the development of 18 projects funded by various sources. The submitted documentation and evidence are incomplete. There are gaps and inconsistencies

2. Brief biographical data of the candidates

Dr. Kuzova obtained a Master's degree in Plant Biotechnology at the Paisii Hilendarski University of Plovdiv in 2001. In the period 2003-2007 he was a doctoral student at the University of Plovdiv, and in 2007 he obtained a PhD in Breeding and Seed Production of Cultivated Plants. Since 2011. has been an assistant at the University of Plovdiv, and since 2012 she has been a chief assistant. She has a certificate of qualification from the University of Plovdiv in "Information Technology". She has specialized at the University of the Algarve, Portugal and in the Laboratory of Developmental Genetics and Biotechnology, University of Vienna (UNIVIE), Austria.

Dr. Vachev obtained a Bachelor's degree in Biology in 2005 and a Master's degree in Molecular Biology and Biotechnology in 2008 at the Paisii Hilendarski University of Plovdiv. He defended two doctoral dissertations and acquired ONS Doctor of Molecular Biology in 2012 from the University of Plovdiv "Paisii Hilendarski" and Doctor of Genetics in 2016 from MU-Plovdiv. The attached curriculum vitae lists the years 2007-2009 in the University of Plovdiv, where he worked as a biologist. A certificate of work experience is presented, which shows that he has a total work experience of nearly 14 years, of which 7 years as Ch. assistant.

3. General characteristics of the activity of the candidates

Dr. Kuzova has conducted exercises in "Molecular Biology" for students with a bachelor's degree in "Biology" and "Molecular Biology", as well as exercises in "Bioinformatics" for students with a bachelor's degree in "Molecular Biology", "Bioinformatics" and "Medical Biology" at BF. She has developed and introduced a lecture course and laboratory exercises in "Molecular Ecology" for students majoring in "Molecular Biology" and a lecture course in "Genetic Engineering" for a bachelor's degree in "Molecular Biology", "Bioinformatics", "EBTP" and "Biology". Exercises on

"Molecular genetic methods in plant protection" for the Master's degree in "Plant Protection" and the discipline "Plant genetic resources and pest resistance" for the International Master's course in Plant Protection (Plant medicine) have been developed. He is currently lecturing on Molecular Ecology, Molecular Biology Design and Analysis, Molecular Markers, Molecular Methods in Forensics, DNA Markers and Genotyping. She was the leader of 5 successfully defended graduates. She participated in the project "Student Internships", funded by OP "Human Resources Management" to the EU - Phase 2 and was an academic mentor in the practical training of a total of 17 students. He is a co-author of two scientific manuals: Manual of Bioinformatics and Workshop on Genetic Engineering, published by PU.

Of the 29 scientific papers submitted at the competition (14 publications with a total IF - 26,991) and 5 publications with a total SJR - 11,867), 4 are classified as habilitation papers. According to the quartiles, in which the Journal of Citation Reports (JCR) of the Web of Science groups the scientific journals with impact factor (IF) and the four are with Q1, with which Dr. Kuzova collects the required 100 points according to indicator B of the regulations for application of ZRARB for acquiring the academic position of "Associate Professor". The indicators from group D are as follows: 3 publ. with Q1; 4 publ. with Q2; 3 publ. with Q3; 5 publ. with SJR, but without IF, which carry 10 points; 3 chapters from books (2 - published in international editions and 1 - from PU); participates in a collective included list of the official variety list of the country for a new variety of beans. I have made an adjustment with regard to the completed NACID table. In the regulations for application of ZRARB (SG, issue 56 of 2018, in force from 06.07.2018, amended and supplemented - SG, issue 15 of 2019) for PN 4.3 it is shown that at publications with SJR, but without IF 10 points are given and the points on the corresponding quartiles are not taken into account. Thus, a total of 320 tons are collected instead of the indicated 342 (minimum 200 tons required). According to the citation indicator, there are 306 points. (require a minimum of 50 tons). A list of 153 citations by independent authors is presented. In approximately 50% of the publications presented, Dr. Kuzova is the first or last author. All scientific publications with IF are in specialized prestigious international journals: *Scientia Horticulturae*, *Biology*, *Biologia Plantarum*, *Front Plant Sci.*, *Plant Physiology* and *Biochemistry* and others.

The main contributions of Dr. Kuzova's research can be grouped in several areas: Regulation of gene expression; DNA markers and genotyping; Sequencing and annotation of chloroplast genomes; Molecular ecology. Temperature stress has been shown to alter the expression of a specific subset of mature miRNAs in *A. thaliana*. The data obtained after sequencing show that low and high temperatures lead to completely different profiles and affect the generation of small RNAs from certain groups of protein encoding genes. After sequencing and quantitative PCR analysis, an opposite expression profile was found between hrh-miR156a-5p and hrh-miR157-5p and their targets in the tissues of dried *H. rhodopensis* plants. A study of the multigenic SOD family among resurrected plant species was conducted for the first time. The high levels of SOD transcripts found in fully dehydrated leaf tissues correlated with the retention of SOD activity and the ability of *H. rhodopensis* plants to resurrect upon rehydration. The presence of a variety-specific response to miRNAs associated with PSTVd infection in pepper has been shown. Polymorphisms associated with insertion / deletion of transposon elements at 7 of the 12 promoter loci in the twelve *A. Thaliana* ecotypes studied have been identified. Representatives of the family

Iridaceae, Lamiaceae are genotyped. New almond varieties have been identified. A number of molecular techniques and classical selection programs have been applied to characterize and improve Bulgarian bean varieties and it has been shown that they are promising germplasm and are suitable for hybridization propagation, as well as for the application of mutagenesis and biotechnological approaches. A comprehensive metagenomic analysis of the planktonic bacterial diversity of two large and economically important Bulgarian dams - Batak and Tsankov Kamak, was performed by sequencing the next generation of the 16S ribosomal RNA gene.

Dr. Vachev presented a list of exercises on "Regulation of gene expression", "Molecular Virology", "Molecular Genetics" and lectures on "Introduction to Molecular Biology" to students of the Bachelor's Degree in Molecular Biology, as well as lectures and exercises in various disciplines in master's programs. The hours of the listed courses and the hours held are not indicated. He was the leader of 9 successfully defended graduates. He is the co-author of two manuals on Molecular Virology and Molecular Medical Genetics and is the author of one manual on Molecular Biology.

Of the 31 scientific papers submitted in the competition, his monograph carries 100 points on indicator B of the regulations for application of the Law on the Acquisition of Academic Organizations for Acquisition of the Academic Position of "Associate Professor". The indicators from group D are as follows: 2 publ. with Q1; 3 publ. with Q2; 2 with Q3, 2 publ. with Q4; 5 publ. with SJR, but without IF, which carry 10 points; 2 chapters of books and published 2 books based on the two dissertations. Thus, a total of 284 points are collected instead of the indicated 369 (minimum 200 tons required). According to the citation indicator, there are 86 points. (require a minimum of 50 tons). A list of 43 citations by independent authors is presented. In approximately 60% of the presented publications, Dr. Vachev is the first or last author. He has published in Plant Physiol Biochem. , Reports of BAS, B&BE, Pediatrics, etc.

The main contributions of Dr. Vachev's research are mainly in two areas: medical molecular genetics and cytogenetics and molecular biological research in plant objects subjected to biotic and abiotic stress. The specific profile of small RNA molecules in the parasitic plant *P. ramosa* as a result of PSTVd infection was studied. Temperature stress has been shown to alter the expression of a specific subset of mature miRNAs in *A. thaliana*. The data obtained after sequencing show that low and high temperatures lead to completely different profiles and affect the generation of small RNAs from certain groups of protein encoding genes. A change in the expression levels of *P. ramosa*-specific MYB1 (transcription factor) and ACO (ascorbate oxidase) genes has been demonstrated in response to PSTVd infection. Decreased ACO expression in infected *P. ramosa* and ACO induction have been shown with the use of synthetic strigolactone analogs. The presence and replication of PSTVd KF440-2 isolate in tomato petals was demonstrated, as was confirmed for sepals, and PSTVd variants (G241-C, C208-U) were found to be isolated from the parasitic plant *P. ramosa* similar to KF440-2 are able to move and multiply into sepals and petals of tomato. Three emerging variants of PSTVd in the parasitic plant *P. ramosa* after mechanical inoculation with PSTVd KF440-2 isolate have been described. The expression profiles of siRNA-486-3p and human endogenous retroviral elements in patients with autism spectrum disorder were studied. Differentially expressed HERV elements have been identified in the peripheral blood of children

with a specific language disorder. Fetal gender identification is achieved by means of freely circulating fetal DNA in the maternal circulation. As a result of performed cytogenetic analyzes in patients with different diseases, different chromosomal abnormalities were found.

4. Critical remarks and recommendations

Dr. Kuzova - There is no extended habilitation report and the scientific contributions are not well formulated. For publications with SJR, but without IF, 10 points are given and the points on the corresponding quartiles are not taken into account. Adjustments must be made to the NACID table

Dr. Vachev - The submitted documentation and evidence are incomplete. There are gaps, unnecessary repetitions in the submitted documents and discrepancies. Scientific contributions are not well formulated. There is no reference for the hours of the courses and the study load, but redundant materials with protocols from the FC are given. For publications with SJR, but without IF, 10 points are given and the points on the corresponding quartiles are not taken into account. Adjustments must be made to the NACID table.

CONCLUSION

The documents and materials submitted by the two candidates meet the requirements of the Law for the Development of the Academic Staff in the Republic of Bulgaria (RLDASRB), the Regulations for its implementation and the internal regulations of the BF of the University of Plovdiv. In terms of training and project activities, the two candidates are commensurate. The teaching qualification of Dr. Kuzova and Dr. Vachev is unquestionable. Candidates have submitted a sufficient number of scientific papers published after the defense of their doctoral dissertations. In terms of the importance of scientific work and international recognition, the two candidates differ significantly. The publications of Dr. Elena Kuzova have a total IF of 26,991 and are cited 153 times, while those of Dr. Tihomir Vachev have a total IF of 7,602 and are cited 43 times. The Hirsch factor of Dr. Kuzova is 7, and 4 – for Dr. Vachev. In the presented table are given the points on the respective indicators of the two candidates compared to the minimum national requirements according to PPZRASRB.

Indicators	Minimum number of points	Dr. E. Kuzova	Dr. T. Vachev
A	50	50	100
B	100	100	100
Г	200	320*	284*
Д	50	306	86
Total	400	776	570

* The points according to indicator D are reduced:

For Dr. Apostolova-Kuzova: Due to reduction of points for articles that have an SJR but no IF.

For Dr. Vachev: Due to the lack of articles №7 and №8 in full text; recognized 2 instead of 7 chapters of books; articles with SJR without IF are awarded 10 points regardless of quartiles.

After getting acquainted with the materials and scientific papers presented in the competition, analysis of their significance and contained in them scientific, scientific-applied and applied contributions, I find it reasonable to give my positive assessment and recommend to the Scientific Jury to prepare a report for Council of the Faculty of Biology for election of Chief Assistant Dr. Elena Dimitrova Apostolova-Kuzova to the academic position of 'Associate Professor' at the University of Plovdiv "P. Hilendarski "by professional field 4.3. Biological sciences, scientific specialty "Molecular Biology".

April 27, 2021 Art.

Member of the scientific jury:

(Prof. Mariela Odjakova, PhD)