

OPINION

from prof. **Albert Ivanov Krastanov**, DSc
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Regarding the procedure for the competition for the academic position of "associate professor", under direction 4.3. Biological Sciences; scientific specialty Microbiology - Development of new functional foods, for the needs of the "General Microbiology" department, Microbial Genetics Laboratory, announced in the State Gazette No. 29 of 12.04.2022 r.

Candidate for participation in the competition: Dr. **Galina Dinkova Smoyancheva**

Basis for the opinion: Order of the Director of the Institute of Microbiology "Stefan Angelov" - BAS, Prof. Penka Petrova and decision of the first meeting of the Scientific Jury.

The candidate, Ch. Assistant Professor Galina Dinkova Smoyancheva, Ph.D., obtained the educational and qualification degree "Master" in Biotechnological Processes, Genetic and Cell Engineering at Sofia University in 1997. In 2006, she defended her dissertation for the acquisition of educational and scientific degree "Doctor" on the topic: "Combined approach for molecular-taxonomic characterization of lactobacilli". From 2000 to 2007, he was an assistant at the Institute of Microbiology - BAS. From 2007 to the present, he is the main assistant at the same Institute. During her scientific activity until now, Dr. Stoyancheva has also conducted two international specializations at the University of Verona, Italy

The main scientific interests of the candidate are focused and directly related to human health, the problem of antibiotic resistance, the search for new therapeutic agents and the increasingly high demands of modern man for clean food without chemically synthesized preservatives and the development of new functional foods with probiotic characteristics.

Ch. assistant professor Galina Dinkova Smoyancheva, PhD, has submitted all the documents necessary for participation in the competition for the academic position "Associate Professor". The documents have been prepared according to the requirements of law under direction 4.3. Biological Sciences; scientific specialty Microbiology, which was also confirmed by the Commission appointed for the purpose by the Director of Institute of Microbiology.

Galina Dinkova Smoyancheva, Ph.D., has submitted 20 scientific publications in full text for participation in the "Associate Professor" competition, which do not repeat those for the acquisition of the "Doctor" title. He is a co-author in a total of 30 scientific publications with a total IF of 27.49. After excluding PhD thesis publications, the total Q is 397.

According to indicator 1 (group A), Dr. Stoyancheva has 50 points out of 50 required for a dissertation work to acquire the ONS "Doctor". On indicator 2 (group B): 0 points out of 0 required.

According to group B indicator, the candidate has 109 points out of 100 required, which are formed by 6 publications published in publications that are referenced and indexed in world-renowned scientific information databases (WoS and Scopus).

According to the group D indicator, the points are 288 with a minimum required of 220 points. These points are formed by 15 publications that are referenced and indexed in world-renowned scientific information databases, as well as 2 book chapters.

According to indicators of group D, citations or reviews in scientific publications, referenced and indexed in world-renowned databases of scientific information or in monographs and collective volumes, the candidate has 600 points out of the required 60 points. Such a number of citations and their value is a relatively rare phenomenon among candidates for "Associate Professor", and precisely citations are an indicator of the level and influence of a scientist's scientific works.

The scientific research asset of Dr. Stoyancheva significantly exceeds the additional criteria for the growth of the academic staff at Institute of Microbiology. The number of publications with which she participated in the contest is 23 (with the required 20). The total impact factor of the articles for the entire scientific career is 27.49 with a required minimum of 20. The total number of citations is 300 (with a required 100) and H-index 7 (with a required 5). With a required minimum of participation in 3 projects, Dr. Stoyancheva has participated in 17 such projects.

Dr. Stoyancheva has participated in a total of 17 projects (5 international and 12 national projects). In 4 of the national projects, the applicant is the head, and the amount of funds raised for the base organization is significant.

The list of presented scientific works in full text contains 20 such published in refereed and indexed journals in world-renowned databases of scientific information. A general list of publications after "doctor" is also presented, containing 28 scientific publications, of which 22 publications are in journals referenced in WoS/Scopus and 6 publications are in peer-reviewed publications, book chapters, proceedings of international forums (published in full text), which are not referenced and indexed in WoS/Scopus. Scientific results have been presented through 30 participations in international and national scientific conferences.

The general scientific activity of Galina Dinkova Smoyancheva, Ph.D., is characterized by actuality; a good methodological basis of research, characterized by the use, creation and introduction of appropriate and modern methods; obtained significant results for science and practice, as well as those that reveal opportunities for future interesting scientific and scientific-applied research.

The high citation rate of Dr. Stoyancheva's works is impressive. Data are presented for 300 citations of publications with the participation of Dr. Stoyancheva. This is one of the most objective criteria for the value of the candidate's publications and the impact they have on the development of science in the given field.

Significant scientific and scientific-applied contributions stand out, which are difficult to comment on within a single opinion. However, the scientific and scientific-applied studies and contributions of Ch. assistant professor Dr. Stoyancheva in the following scientific fields: Research on genes related to enzyme production; Biodiversity of microorganisms in different ecosystems; Species identification of bacteria, yeasts and fungi; Lactic acid bacteria.

Dr. Stoyancheva's contributions succeed in uniting fundamental and applied science. In this regard, five catalase genes were discovered and fully sequenced in *Penicillium griseofulvum* strain P29, a producer of temperature-sensitive catalase. The expression levels of the five genes at different temperature regimes were investigated with reverse-transcription Quantitative Real-Time PCR. Numerous studies have been carried out, including the species identification of strains of filamentous fungi by sequence analysis of various taxonomic markers - the ITS region, the gene for the small ribosomal subunit (SSU rRNA), the gene for the large ribosomal subunit (LSU rRNA), the *tef1- α* gene (translation elongation factor 1 alpha) and the *tub2* gene (beta-tubulin). The isolated fungal strains were identified by sequencing the ITS region and the small ribosomal subunit (SSU) gene. This study is the first to report on the taxonomy of fungi inhabiting the mentioned World Heritage sites. Current results are a summary study on the biodiversity of filamentous fungi. A number of studies have been carried out related to analyzing the genome of active strains of lactobacilli - proof and sequencing of bacteriocin genes; proving secretion of peptides with antibacterial activities in isolates from the human microbiome; probiotic evaluation and characterization of certain strains.

Another aspect of Dr. Stoyancheva's scientific research is the additional study of the genome of five strains of *Lactobacillus crispatus*, which show strong antibacterial activity. Based on sequence analysis from the databases, specific primers were created to prove the presence of a gene for the bacteriocin *helveticin*. Further studies of the probiotic characteristics of 10 lactobacilli strains isolated from clinical vaginal samples, which are the subject of studies advocated in publication 6 of the general list of publications, also contribute to the integrity of the candidate's scientific profile. All strains were rated as "probiotics" because they inhibited the growth of two different strains of *Escherichia coli* (HB101 and C600).

In addition, strain HV219, identified as *Lactococcus lactis* subsp. *lactis*, was isolated and characterized. The strain showed strong antibacterial activity and bacteriocin production.

The general scientific activity of ch. assistant Dr. Stoyancheva is characterized by: - Relevance; - A good methodological basis of research, characterized by the use, creation and introduction of appropriate and modern methods; - Obtained significant results for science and practice, as well as those that reveal opportunities for future interesting scientific and scientific-applied research; - Significant scientific output.

Conclusion: The candidate ch. assistant professor Galina Dinkova Smoyancheva, PhD, is an accomplished and erudite researcher in his field with an impressive scientific output, which characterizes him as a modern scientist with original scientific ideas and methodical preparation for their implementation. With his publications, she makes significant contributions to science and practice and opens up opportunities for new research.

This, together with my impression of all the submitted materials for the competition, gives me reason to confidently recommend to the respected scientific jury to unanimously propose Ch. Assistant Professor Galina Dinkova Smoyancheva, Ph.D., to occupy the academic position of "ASSOCIATE PROFESSOR", according to 4.3. Biological Sciences; scientific specialty Microbiology.

06.07.2022

Plovdiv

Signature:

(prof. A. Krastanov)