

REVIEW



by Assoc. Prof. Yoana Dimitrova Kiselova-Kaneva, PhD
Department of Biochemistry, Molecular Medicine and Nutrigenomics
Faculty of Pharmacy, Medical University "Prof. D-r Paraskev Stoyanov", Varna
Tel: (052) 677050/ext. 2983, e-mail: ykisselova@abv.bg

Member of scientific jury, defined with Order No ПД-266/15.09.2022 of the Rector of University "Prof. D-r Asen Zlatarov".

Subject: awarding of the academic position "**Associate Professor**" in the field of higher education 4. Natural sciences, mathematics and informatics, professional field 4.2. Chemical sciences, scientific specialty "**Biochemistry**", for the needs of the University "Prof. Dr. Asen Zlatarov", Burgas, in connection with a competition announced in the State Gazette, issue 45 of 17.06.2022.

I have been provided with the documentation of the only candidate in the announced competition - that of eng. Yordan Nikolaev Georgiev, PhD. All necessary documents are available, according to the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Regulations for its Application and the Regulations for the Terms and Conditions for Acquiring Scientific Degrees and Holding Academic Positions at the University "Prof. Dr. Asen Zlatarov", Burgas.

Biographical data

Yordan Nikolaev Georgiev graduated from the University of Food Technologies, Plovdiv in 2011 with a bachelor's degree in Biotechnology, professional qualification "Engineer". In 2013, he obtained a Master's degree in Biopharmaceutical Biochemistry with the professional qualification "Biologist" at Plovdiv University "Paisiy Hilendarski". During his work experience, he worked successively as an analytical chemist in the Scientific Research Sector at the University of Food Technology, Plovdiv (2011) and the Laboratory of Biologically Active Substances-Plovdiv (LBAS) at the Institute of Organic Chemistry with Center for Phytochemistry (IOCCP), Bulgarian Academy of Sciences (BAS) (2011-2013) and Innovative Technology Center (2012-2019). In the period 2016-2018, he was appointed as an assistant at LBAS-Plovdiv at IOCCP-BAS, and in the period 2018-2021 he worked as a part-time professor assistant at the Medical University, Plovdiv. From 2018 to the present, he is the chief assistant at LBAS-Plovdiv.

From August 2022 to the present, he is a researcher on the Competence Center project at IOCCP-BAS.

Research activity

Eng. Yordan Nikolaev Georgiev obtained his PhD degree in 2018 at IOCCP-BAS, with the Title of his PhD thesis "*Study of the structure and immunomodulatory potential of pectin-type acidic heteropolysaccharides in Bulgarian medicinal plants*". Thus, in area 4. Natural sciences, mathematics and informatics, the candidate has the required 50 points on Indicator A1 of the scientometric indicators for the occupation of the academic position "Associate Professor".

In his research activity, eng. Yordan Georgiev mainly works on the isolation, characterization and study of biological activity of polysaccharides from natural sources. Another large part of his scientific works is dedicated to the study of phytochemical composition and antioxidant activity of extracts from forest fruits, vegetables and medicinal plants with the aim of developing new functional products with biomedical application. In this regard, the candidate's scientific interests are related to the search for immunomodulatory polysaccharides and antioxidant metabolites in Bulgarian medicinal plants, poorly studied cyanobacteria, Antarctic yeasts and traditional agricultural crops in order to develop new functional products. The relationship between structure and biological activity of the extracted polysaccharides was investigated and their applicability for gels, foams, emulsions and other technological formulations was analyzed. The subjects of research are some popular medicinal plants, such as *Sorbus domestica*, *Sideritis scardica*, *Geranium sanguineum*, *Silybum marianum*, *Lavandula angustifolia*, *Melissa officinalis*, *Ocimum basilicum*, *Rosa alba*, *Aronia melanocarpa*, jojoba, etc. From a biomedical point of view, the data on the immunomodulatory properties of polysaccharides from the roots of blood geranium (*G. sanguineum*) are of interest. The water-extractable polysaccharides in the roots of the medicinal plant exhibit *ex vivo* immunomodulatory activity by inducing an immune response in human monocytes, granulocytes and cells of acquired immunity. They also activate murine macrophages by stimulating the production of nitric oxide and IL-6. Polysaccharides from the roots of the herb were found to dose-dependently activate the *ex vivo* production of reactive oxygen species.

In another group of studies, data were obtained on the potential of the waste secondary products obtained during the oil extraction of lavender, lemon balm, common basil and white oil rose. They have been found to be rich in a number of polyphenolic compounds and exhibit high antioxidant activity. The extracts also contain good residual amounts of aromatic

compounds. Aqueous extracts of jojoba pomace were found to exhibit *in vivo* protective effects in a rat model of paracetamol-induced hepatotoxicity, helping to restore the antioxidant defense of the liver and suppressing inflammation and apoptosis, normalizing the levels of a number of enzymes, markers of toxicity, as well as increase the suppressed activities of some antioxidant enzymes and reduced glutathione levels. Under the action of the same extracts, the metabolism of glucose and lipids is also favorably affected.

In conclusion, the scientific contributions of the works of eng. Yordan Georgiev contribute to clarifying the applicability of various raw materials of natural origin, including some medicinal plants, for the development of innovative products of technological and biomedical significance.

Publication activity

According to Criterion B, for his participation in the current competition, eng. Yordan Georgiev has submitted 6 (six) publications that are according to Indicator B4 - equivalent to a habilitation work (Habilitation work = scientific publications in publications that are referenced and indexed in world-renowned databases with scientific information (Web of Science and Scopus)). The total number of points under Criterion B is 145. In this way, the minimum and mandatory requirement of 100 points under Criterion B is fulfilled and exceeded. According to Criterion Г, a total of 13 scientific papers are presented in the documentation - scientific publications, referenced and indexed in world-famous databases with scientific information (Web of Science and Scopus) (Indicator Г7). The total number of points from the publications presented in the reference for fulfilling the minimum national requirements for the academic position "Associate Professor" in Criterion Г is 265, fulfilling and exceeding the minimum requirement of 200 points from indicators Г5-Г10. According to the prepared academic report, the total impact factor (IF) of the journals with which eng. Yordan Georgiev participated in the competition is 82.94.

According to Indicator Д11, Yordan Georgiev has a total of 234 citations (468 points) of 16 papers (Indicator Д11). Of these, 250 points (125 citations) are from the candidate's publications, accepted for publication after 12.07.2018 (after the acquisition of academic position chief assistant").

Teaching activity

Engineer Yordan Georgiev has a teaching experience as an assistant (laboratory exercises and seminars) at the Medical University - Plovdiv, which equates to a total of 1428 hours of classroom employment and 73 hours of participation in examination committees, spread over three academic years, and the teaching is for students from specialties Medicine, Dental medicine (in Bulgarian and

English) and Pharmacy. He is the scientific supervisor of a graduate student at the Department of Biotechnology at the Faculty of Technology of the University of Food Technology - Plovdiv with the subject of the thesis "*Study of the structure of water-extractable pectin polysaccharides in the leaves of the ancient Rhodope endemic Haberlea rhodopensis Friv. (Orpheus Flower)*". The candidate has participated as a lecturer in educational courses and scientific seminars for the training of students and PhD students in Bulgaria and abroad. Yordan Georgiev is the author of Biochemistry Teaching Aid for Medical Students - Questionnaire for Self-Preparation for Colloquiums (Indicator E20). Engineer Yordan Georgiev is a participant in eight national and 2 international finalized and current projects, of which he is the leader of two (Indicators E14-E17).

Participation in scientific events and trainings, awards

During his research career, eng. Yordan Georgiev has participated in over 30 national and international scientific events. He is the winner of awards and nominations from various institutions: Bulgarian Academy of Sciences - for a young scientist up to 35 years old in the direction "Biomedicine and quality of life" for 2021, for management of a successful scientific project for 2017 and for the best publication in the same year. He has been nominated for a 2020 „Pythagoras“ Young Scientist Award and honors for presentations at scientific conferences. Yordan Georgiev has participated in a number of trainings and mobilities in Bulgaria and abroad.

In summary, the scientometric indicators of Eng. Yordan Nikolaev Georgiev for his participation in the current competition for "Docent" are reflected in the following table:

Criterion	Content	Minimal scientometric „Associate Professor“ (number points)	Yordan Nikolaev Georgiev
A	Indicator A1: PhD thesis to acquire of the educational and scientific degree of PhD	50	50
B	Indicator B3 or B4: Habilitation thesis – monography	100	145
Г	Sum of indicators Г5-Г10	200	265
Д	Indicator Д11	100	468
Е	Sum of indicators E12-E20	100	230

Conclusion

In conclusion, according to the materials and documents submitted for review, I believe that the scientific interests and contributions of Yordan Nikolaev Georgiev are in accordance with the profile of the announced competition. All mandatory requirements for scientometric indicators laid down in the currently effective Law on the Development of Academic Staff of the Republic of Bulgaria and the Rules for the Terms and Conditions for Acquiring Scientific Degrees and Holding Academic Positions in a University "Prof. Dr. Asen Zlatarov", Burgas have been met, and in some cases - exceeded.

Based on the performance of the mandatory scientometric indicators, as well as my general assessment of his teaching and scientific activity, I consider that end. Yordan Georgiev meets all the requirements for holding the academic position "Associate Professor", reflected in the above-mentioned regulatory documents. All this gives me the reason to give my positive assessment and with conviction to recommend to the Honorable Members of the specialized Scientific Jury to award him the academic position "Associate Professor" in the scientific specialty "Biochemistry", in the professional direction 4.2. Chemical Sciences, for the needs of the University "Prof. Dr. Asen Zlatarov", Burgas.

November 14, 2022

Varna

Member of scientific jury

/Assoc. Prof. Yoana Kiselova-Kaneva, PhD/