

## OPINION

Regarding the acquisition of the academic position "professor", in a professional field 5.11. Biotechnology (Technology of biologically active substances) for the needs of the Department of Biotechnology, Laboratory "Metabolomics"

**Candidate:** Assoc. prof. Milen Georgiev, PhD

**Opinion was prepared by:** Assoc. prof. Lyudmila Kabaivanova, PhD, IMikB "Stephan Angeloff" – BAS

The candidate Milen Georgiev is currently an associate professor at the Institute of Microbiology - BAS and Head of the Laboratory "Metabolomics" since 2020.

His research activity is in the field of biosynthesis and metabolic manipulation of pharmaceutically important molecules of plant origin and their sustainable biotechnological production. The topics he develops are indisputably relevant due to the fact that the share of plant products offered on the market as medicines is increasing, as well as the need for additional food for the growing population on earth. Biotechnology offers alternative approaches to the sustainable production of such natural molecules that have enormous potential. The use of modern and innovative methods and approaches in research, namely methodology of genomics, transcriptomics, proteomics and metabolomics, shows the quality of his research, the main focus of which is the research of natural molecules with anti-inflammatory and anti-obesity activity. Assoc. Prof. Georgiev introduces for the first time in Bulgaria the modern platform for nuclear magnetic resonance (NMR) metabolomics. NMR metabolomics is currently used successfully in biotechnology, science and pharmacy.

The scientific activity of Assoc. Prof. Georgiev can be highly appreciated, based on his high scientometric indicators. He is the author / co-author of 130 scientific publications, cited more than 2,500 times. He participates in the competition with a total of 57 publications.

As chairman of the organizing committee, he has organized several times and contributed to the successful holding of an international conference on the rational utilization of useful products: from the plant to the pharmaceutical shelf (ICNPU).

Milen Georgiev is the winner of three Pythagorean awards (currently the only scientist in Bulgaria, awarded three times), the Marin Drinov Award of the Bulgarian Academy of

Sciences for young scientists and a diploma for high scientific achievements from the Board of the Bulgarian Academy of Sciences.

According to the submitted report for fulfillment of the minimum requirements for the academic position "Professor" on the basis of the Regulations for application of the Law for Development of the Academic Staff of the Republic of Bulgaria and the Bulgarian Academy of Sciences, as well as according to the Additional Requirements of IMicB, it can be seen that the candidate fully meets all the requirements - he has submitted materials corresponding to 5072 points out of the required 600.

The main scientific contributions of Assoc. Prof. Dr. Milen Georgiev, reflected in the published scientific papers, are in the field of plant biotechnology, chemistry of natural molecules (including metabolomics and metabolic profiling) and pharmacology:

1. 1. Creating the basis of complex molecular knowledge for metabolic manipulation of secondary plant metabolism.
2. Development of a metabolic platform for complex analysis of metabolic imprints from biochemical reactions in cells and its use for qualitative and quantitative control of complex pharmaceuticals and food additives.
3. Isolation and purification of biologically active molecules, incl. by using liquid chromatography.
4. Evaluation of the antineoplastic potential and mechanism of action of extracts and pure molecules.
5. Evaluation of anti-inflammatory and immunoregulatory activity of extracts and pure molecules.
6. Evaluation of the antiviral potential of extracts and pure molecules.
7. Development of methods for obtaining new materials based on the principles of "green" chemistry.

Assoc. Prof. Georgiev has undoubtedly proven himself as an established scientist and specialist. The activities of the candidate in the field of modern plant technologies, based on the new methods of functional genomics - transcriptomics and proteomics, allowing in-depth studies of the biological systems at the level of secondary metabolism of plant cell, are impressive.

## **CONCLUSION**

Based on my acquaintance with the submitted documents, scientometric data and works, after assessing their importance, the scientific and applied contributions contained in them, as

well as the active expert and project activity of the candidate, I find it reasonable to state that my opinion on the acquisition of the academic position "Professor" in the Professional field: 5.11. Biotechnology / Technology of biologically active substances by Assoc. Prof. Milen Georgiev is positive.

20.08.2020

Prepared by:

/Assoc. prof. Lyudmila Kabaivanova, PhD/