O P I N I O N

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

Candidate: Assist. prof. Andrey Marchev, PhD

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

The candidate Andrey Marchev is currently an assistant professor at the “Stephan Angeloff” Institute of Microbiology – BAS, Laboratory "Metabolomics", Department “Biotechnology”.

His research activity is in the field of plant biotechnology, related to initiation and manipulation of the biosynthetic capacity of plant *in vitro* systems for the biosynthesis of biologically active molecules.In-depth metabolic analyses by recent NMR spectrometry allow the qualitative and quantitative determination of a wide range of substances and products of primary and secondary metabolism and the identification and quantification of active molecules in complex plant extracts.The topic developed by the candidate is a priority, it concerns the creation of alternative approaches for obtaining pharmaceutically significant molecules with cytoprotective and anti-inflammatory effect from endemic plant species and their *in vitro* cultures.It is undeniably relevant due to the fact that the share of plant products appearing on the market with medicinal properties is increasing.In the course of his scientific activity Dr. Marchev has carried out several specializations abroad, which have helped to expand his horizons and accumulate theoretical and practical skills in this field.

Assist. prof. Marchev actively participates in the projects developed inside and outside the department. He is a participant in 2 international and 10 national projects, 3 of which he is a leader.In 2017 he received an award for excellent project management under the joint program "Support for Young Scientists" at the initiative of MES and BAS.He is the author and co-author of 49 scientific papers, including 1 utility model.

In addition, Dr. Andrey Marchev participates in various organizational activities, such as participation in the organizing committee of the second and third international scientific

conference "Rational utilization of natural products: from the plant to the pharmaceutical shelf" and the Ninth Conference on Medical and aromatic plants of the countries of Southeast Europe in 2016.He has been a member of the management board of the Bulgarian Phytochemical Association since 2017.A significant part of the expert activity of Assist.prof. Marchev is his activity as a reviewerin several scientific journals: Phytomedicine, Food and Chemical Toxicology, Food Chemistry, Phytochemistry Reviews, Biotechnology Letters, Molecules, Industrial Crops and Products, Frontiers in Pharmacology, etc..According to the submitted report for fulfillment of the minimum requirements for the academic position "Associate Professor" on the basis of the Regulations for application of LDASRB and BAS, as well as the Additional requirements of IMikB, it can be seen that the candidate fully meets all requirements.The materials submitted by the candidate correspond to 2 761.44 points over the required 400.

The main scientific and scientific-applied contributions of Assist. Prof. Andrey Marchev, PhD, reflected in the published scientific papers, are in the field of plant biotechnology, chemistry of natural molecules (metabolomics and metabolic profiling based on nuclear magnetic resonance and high performance liquid chromatography) and pharmacology, more important of which are:

1. Initiation of plant *in vitro* systems, optimization of cultivation conditions and metabolic manipulation of the secondary metabolism towards increased biosynthesis of secondary metabolites.
2. An utility model has been developed that relates to the composition of the nutrient medium for *in vitro* propagation of the plant *Haberlea rhodopensis* Friv. (Orpheus flower) for the accumulation of myconoside for the needs of the pharmaceutical industry.
3. Development of a metabolic platform based on nuclear magnetic resonance and high performance liquid chromatography for the study of metabolic variations in medicinal plants and its application in the study of the authenticity and quality of commercial preparations of medicinal plants.
4. Investigation and demonstration of the anti-inflammatory, immunomodulatory and antiviral activity of plant extracts and pure molecules.

Dr. Marchev has undoubtedly proven himself as a scientist and specialist, which can be seen from the quality of his scientific production and the relevance of the developed issues.His articles have been published in prestigious international journals in the field of biotechnology and pharmacology.The activities of the candidate in the field of modern plant

technologies are based on the new methods of functional genomics, which allow in-depth studies of biological systems at the level of secondary metabolism of the plant cell.Application of "omix" approaches, especially metabolomics to study the effect of plant extracts and pure molecules is a new technique, the application of which would lead to solving a number of problems related to human health.

CONCLUSION

Based on my acquaintance with the submitted documents and materials, scientometric data and works, after assessing their importance, the scientific and applied contributions contained in them, as well as the active organizational, expert and project activities of the candidate, I find it reasonable to state that my opinion on the acquisition of the academic position of "Associate professor" in the Professional field: 5.11. Biotechnology / Technology of biologically active substances by Assistant professor Andrey Marchev is positive.

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Prepared by:
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