OPPINION

by Dr. Daniela Valentinova Antonova,

Associate Professor at the Institute of Organic Chemistry with the Center of Phytochemistry (IOCCP), BAS

concerning materials submitted for the competition for the academic position of **Associate Professor at The Institute of Organic Chemistry with Center of Phytochemistry (IOCCP), Bulgarian Academy of Sciences (BAS)** in the field of higher education 4, Natural Sciences, Mathematics and Informatics, professional field 4.2. Chemical Sciences, scientific specialty Bioorganic Chemistry, Chemistry of Natural and Physiologically Active Substances for the needs of **Laboratory Chemistry and Biophysics of Proteins and Enzymes.**

1. **General presentation of the procedure and the applicants:**

In the competition for "Associate Professor", announced in the State Gazette, issue. 43 of 31.05.2019 and on the website of IOCCP-BAS, the **only one applicant** who has submitted documents is: **Assistant Professor Dr. Alexandar Konstantinov Dolashki**, Laboratory "Chemistry and Biophysics of Proteins and Enzymes", IOCCP-BAS.

The application set of materials (electronically and in paper), submitted by Dr. Alexandar Dolashki comply with The Act for the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its application, the Regulations of the BAS and the IOCCP-BAS on the conditions and the procedure for the acquisition of scientific degrees and occupation of academic positions in the part Associate Professor.

Dr Dolashki graduated from University of Chemical Technology and Metallurgy in 2000 as MSc (Engineer in Chemistry) in Systems and Processes in Chemical Technology. In 2005 he has obtained PhD (Dr.rer.nat) degree from Tubingen University (Germany) with a PhD thesis entitled "Structure, functions and properties of copper-containing proteins: hemocyanins and superoxide dismutase". In 2006 the PhD degree was approved by Bulgarian Higher Attestation Commission in the specialization field 01.05.10 "Bioorganic Chemistry, Chemistry of Natural and Physiologically Active Substances". Since 2006, Dr. Alexandar Dolashki has been working at IOCCP-BAS.

The application materials contain totally 49 items, among which: 1 textbook with a notebook and a list 34 research and educational project participation. According to the regulations, listed above, the reviewing will be accepted 24 scientific papers, not included in the PhD thesis, and 35 projects participations (16 national and 14 international as a team member, and 2 national and 3 international as a project coordinator). Outside of the reviewing remain 10 scientific papers, included in the PhD thesis, and 15 papers being outside of the scientific field of the competition. The distribution of the scientific papers according to the relevant Q factors is as follows: Q1 (7), Q2 (9), Q3 (4), Q4 (2). Four recognized national patent applications were also submitted.

Based on the application materials it should be underlined that Dr. Alexandar Dolashki substantially exceeds the minimal requirements of the regulations of IOCCP-BAS for the academic position Associate Professor.

2. **General summary of the scientific activity of the candidate:**

The accepted application materials include investigations in the field of bioorganic chemistry and are especially related to the structure and properties of proteins and glycoproteins.

The research is summarized in an extended habilitation work containing results from 11 scientific articles. Additionally 13 papers included in internationally recognized bibliographic databases are submitted for the competition. The total impact factor of these 24 articles is 43, 262 citations are noticed. In addition 53 conference (national and international events) abstracts are presented. Dr Dolashki is a co-author of the university textbook entitled “The Essentials and Biological Applicability of Mass Spectrometry” with a notebook.

As noted above the application materials are related to the structure and properties of proteins and glycoproteins:

1. Isolation and characterization of the structure and properties of proteins with one copper ion in the active site (superoxide dismutase) (Publication No1 and 2);
2. Isolation and characterization of the structure and properties of proteins with two copper ions in the active site (hemocyanins) (Publications No 3,4,5);
3. Isolation and characterization of the structure and properties of glycoproteins with tree copper ions in the active site (tyrosinases) (Publications No 6,7,8 and 9);
4. Proteomic analises of antitumor activity of hemocyanins (Publication No 10).

Contributions from the other 13 publications are in the same scientific fields as the habilitation work is, namely: Combining enzymatic and non-enzymatic methods, hemocyanins and their functional units from different sources have been isolated and purified and their structures, properties and function were investigated.

Dr. Dolashki has co-authored four national patents: "Bioactive product containing hemocyanin". Protected No 66374 B1/31.10.2013; "Gastric Disease Prevention and Treatment Composition" Protected No 2194 B1/31.03.2016; "Biologically active peptides from the hemolymph of Rapana venosa". Protected No 66614 B1/31.10.2017, and "Composition of biologically active slime mucus mixtures of Helix aspersa for use in food additives and the cosmetic industry". Protected No. 66832 B1 / 04/02/2019.

Dr. Dolashki's scientific achievements can be defined as contributions containing new and original information for science, methodological contributions and applied contributions.

All of presented publications are co-authored. In the published 11 scientific papers, presented as the equivalent of habilitation work, Dr. Dolashki is the first author in 8 articles and the second - in two of them, which is an indication of the significant personal contribution in the investigations.

According to Dr. Alexandar Dolashki, his future research development will be closely related to the participation in the following scientific projects:

ДО1-2017/30.11.2018 (2018-2022) National Scientific Program "Innovative Low-Toxic Biologically Active Precision Medicine (BioActiveMed)”;

BG05M2OP001-1.002-0019. "Clean Technologies for Sustainable Environment - Water, Waste, Energy for Circular Economy".

Scientific studies are related to the isolation of native peptides and glycopeptides from mollusc extracts and their characterization by MALDI-TOF/TOF-MS, qTrap-MS and MS^2, and ESI-MS measurements, for which Dr. Dolashki has proven expertise. Particular attention should be paid to establishing the therapeutic effect of biologically active substances and clarifying their mechanism of action.

CONCLUSION:

The documents, presented by Assistant Professor Dr. Alexandar Dolashki meet all requirements of the Act for the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its application, the Regulations of the BAS and the IOCCP-BAS on the conditions and the procedure for the occupation of academic position of **Associate Professor.**

The candidate submitted a significant number of scientific papers published after the materials used in the defense of PhD thesis. The candidate's works have original scientific and applied contributions that have received international recognition, as a representative part of them have been published in high-rated international journals. The theoretical developments have practical applicability. The scientific and methodological qualifications of Dr. Alexander Dolashki are beyond any doubt.

Dr. Alexandar Dolashki is a member of scientific team with an impressive number of prestigious national and international awards for the exploitation and commercialization of scientific results, including the individual PYTHAGORAS 2012 Science Award for a team of business research; the highest prize, statuette and certificates "Inventor of the Year 2012", gold plaque (2014 and 2016), silver medal (2011 and 2015), diplomas and certificates from the annual national exhibition "Inventions, technologies , innovation", etc.

The results achieved by Dr. Alexandar Dolashki definitely fulfil the specific requirements for the occupation of the academic position "Associate Professor" in IOCCP, BAS, which gives me the reason for **positive assessment**. Therefore I warmly recommend to the Scientific Jury to recommend the Scientific Council of IOCCP, BAS to elect **Assist. Prof. Dr. Alexandar Dolashki** as **Associate Professor** in the professional field 4.2 "Chemical sciences", scientific specialty "Bioorganic chemistry, chemistry of natural and physiologically active compounds".

18.09.2019,
Sofia

Signature:
(Assoc. Prof. Daniela Antonova)