REVIEW

on a competition for the occupation of an academic position "associated professor" at the University "Prof. Dr. Asen Zlatarov" - Burgas, announced in State Gazette no. 45 of 17.06.2022 for the needs of the Department of Health and Pharmaceutical Care at the Medical College of the University "Prof. Dr. Asen Zlatarov" - Burgas.

in the field of higher education: 7. Health care and sports
scientific specialty: Pharmaceutical Chemistry

with candidate: ch. asst. prof. Stefan Vanev Harkov, PhD, chief assistant professor in the same department

by Prof. Alexander Borisov Zlatkov, DSci
member of the scientific jury, determined by order No. RD 241/15.09.2022 of the Rector of the University "Prof. Dr. Asen Zlatarov" - Burgas.

The review of the materials presented in the competition is based on the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Rules for its Application, as well as the Rules for the Terms and Conditions for Acquiring Scientific Degrees and Holding Academic Positions and Quality Criteria for Development of the academic staff of the University "Prof. Dr. Asen Zlatarov" - Burgas.

The review was prepared on the basis of a Decision from a Meeting of the Scientific Jury. There are no established procedural violations.
In connection with my participation as a member of the scientific jury, I declare that:

- I have no conflict of interest;
- I have no comments on the materials provided to me for review.

For participation in the announced competition for the occupation of an academic position "associate professor" in the scientific specialty Pharmaceutical Chemistry in the Department of Health and Pharmaceutical Care at the Medical College at the University "Prof. Dr. Asen Zlatarov" - Burgas

documents were submitted by a single candidate ch. Assistant Professor Stefan Vanev Harkov, PhD, chief assistant in the same department.

Personal and professional data about the candidate

Ch. Assistant Professor Stefan Harkov was born in 1986. In 2010, he graduated in pharmacy from the Lviv National Medical University "Danilo Galitsky", Lviv, Ukraine, and obtained a master's degree in pharmacy. In the same year, he started a full-time doctorate for 4 years at the Lviv National Medical University "Danilo Galitsky". After successfully defending his dissertation on the topic "Synthesis and biological activity of thiazolidine derivatives with a 2-oxo-1,3-dihydroindole fragment in the molecule" in 2014, he obtained the Doctorate in Pharmaceutical Chemistry and Pharmacognosy. It is recognized according to the legal procedure in Bulgaria (Certificate No. 120/10.01.2020) and the candidate is included in the NACID register.

During the period 2010-2019, he worked as a master pharmacist in various units of the pharmaceutical sector, meanwhile in 2016 he joined the Medical College at the University "Prof. Dr. Asen Zlatarov" - Burgas. In 2019, he won a competition for the position of chief assistant at the same college. Since 2020, he holds the administrative position of Deputy Director of the Medical College at the University "Prof. Dr. Asen Zlatarov" - Burgas.

Teaching and learning activity

Ch. Assistant Professor Stefan Harkov is engaged in a considerable volume of teaching and learning work. Since the academic year 2016/17, he has held the academic position of assistant, since 2018 he becomes a chief assistant and actively participates in the teaching of mandatory disciplines according to the EDI for the acquisition of the OKS "professional bachelor" to students from the assistant pharmacist specialty at the Medical College at the University "Prof. Dr. Asen Zlatarov" - Burgas

For the entire period of his teaching activity, he has the full study load required by the University's regulations, which is evident from the presented report on the study load. The total study load for the last six academic years is 3397 hours or an average of 567 hours per year at a standard of 400 study hours.

Ch. Assisstant Professor Harkov has experience in lecturing and conducting practical exercises, seminars, training practices and pre-graduate internship.

Research activity

Regarding his research work ch. asst. prof. Stefan Harkov fully covers the scientometric criteria established in the Regulations for the conditions and procedures for acquiring scientific degrees and occupying academic positions at the University "Prof. Dr. Asen Zlatarov" - Burgas.

For participation in the competition for associate professor, Harkov presents a list of 25 scientific works, ranked as follows:

- Scientific publications in journals referenced and indexed in world-renowned databases of scientific information (SCOPUS) – 16;
- Scientific publications in non-refereed peer-reviewed journals – 9.

In four of the publications, Harkov is an independent author, in 3 he is the first or last, and in 18 he is in another position in the author collective.

The overall production is in accordance with the field of higher education and the scientific specialty of the announced competition. The publications are in Bulgarian and foreign scientific journals: refereed scientific editions, collections with a signature, with a scientific editor and publishing house, and it is in accordance with the national and university educational-normative base for acquiring scientific degrees and holding academic positions.

The publishing activity of ch. assistant Harkov starts from 2013, being evenly distributed over the years. From the publications, one can clearly see the sequence in his development as a promising and erudite scientist.

A general description of the candidate's scientific activity and some more important scientific contributions of the candidate

The main direction in the scientific research of ch. assist prof. Stefan Harkov is the synthesis of new compounds with potential biological activity, including thiazolidine, pyrazoline and isatine molecular fragments. The synthesized new compounds were investigated for antitumor, antiviral and antioxidant activity "in vitro" as well as a detailed study of their toxicity "in

vivo". Some of the newly synthesized derivatives have shown high activity and low toxicity during research and can be qualified as "leaders" in the search for potential medicinal products. In silico studies and COMPARE analysis of groups of potential antitumor and antiviral agents have also been carried out, on the basis of which hypotheses about the mechanism of action and formulation of proposals for targeted synthesis of new drug molecules can be built.

In this sense, two types of contributions are formed:

1. Contributions of a fundamental nature - are related to summarizing the data on synthesis and biological activity of various heterocyclic systems, reviewing the current knowledge regarding the perspectives and challenges for the use of thiazoloquinazolines and other representatives of heterocyclic compounds. Analysis of current advances in the pharmacological screening of different groups of heterocyclic compounds.

2. Applied contributions – related to the synthesis of new heterocyclic compounds with potential pharmacological activity using organic synthesis methods, in silico methods, molecular docking and QSAR modeling. Various screening methods have been applied to determine biological activity. The contribution nature is based on the synthesis of new compounds with potential pharmacological activity.

Last but not least, the emphasized interest of ch. assist. prof. Harkov to Phytochemistry - extensive phytochemical study of representatives of the genus "Geum L." and Punica granatum, supplemented by a morphological and anatomical study. A detailed anatomical study of the underground and aboveground organs of "Geum urbanum" and determination of the quantitative content of BAS was carried out. The quantitative content of tannins in individual organs (underground and aboveground) was also determined depending on the period and phase of picking. Approaches have been created for obtaining phytopreparations and determining their antimicrobial activity. In connection with the phytochemical studies conducted in this way, contributions of a confirmatory nature have been realized.

In my opinion ch. assist. prof. Harkov has so far managed to appear as a scientific researcher in the indicated interrelated directions, including knowledge and skills in the field of synthesis of BAS from the heterocyclic order, as well as in the field of phytochemical analysis. The interdisciplinary professional appearance of ch. assist. prof. Stefan Harkov is a good prerequisite for him to achieve success after his habilitation.

Citations of works of ch. assist. prof. Dr. Stefan Harkov from other authors

The first journal scientific publication of ch. assist. prof. Harkov is since 2013. From then until now, the period is relatively short, so that significant citation of the publications in which he is a co-author can be expected. The reference he provided includes a list of 4 citations. My query showed an h-index of 8 and 181 citations (excluding author self-citations). When excluding the self-citations of all co-authors, 26 citations remain, which is a good indicator related to the relevance of the developments of ch. assist. prof. Harkov and the interest they aroused in the international scientific community.

The participation of ch. assist. prof. Harkov in acquiring the results is essential. Obviously, the quality of scientific developments with the candidate's participation is at a very high level, as well as his ability to work in a team. The facts presented determine ch. assist. prof. Stefan Harkov as a qualified scientist.

In summary, the scientific production presented by the candidate covers and exceeds the minimum required national criteria, as well as the requirements of the University "Prof. Dr. Asen Zlatarov" - Burgas. The author's quantitative report on research and scientific activity, presented below, illustrates this.

A group of indicators	Contents	Minimum number of points according to national requirements	Regulations of the University "Prof. Dr. Asen Zlatarov" - Burgas	ch. assist. prof. Stefan Harkov
A	Indicator 1	50	50	50
B	Indicator 2	-	-	-
C	Indicators 3 and 4	100	100	101
D	Sum of the indicators from 5 to 9	200	220	232
E	Sum of the indicators from 10 to 12	50	60	60
F	Sum of the indicators from 13 to the end	-	20	30
Maximum total points		400	450	473

Conclusion

On the basis of what was said in my review about the assets in the teaching and research work of the candidate in the competition for the academic position "associate professor" in the scientific specialty "Pharmaceutical Chemistry", I believe that ch. assist. prof. Stefan Harkov is a proven teacher and scientist, possessing the necessary qualities to occupy this academic position. His qualifications, teaching experience and achieved scientific results allow me to give a positive assessment and confidently suggest to the respected Scientific Jury to support my proposal for awarding the academic position "associated professor" to ch. assist. prof. Stefan Vanev Harkov.

Sofia

18.11.2022 prof. Al. Zlatkov, DSci