

REVIEW

By Associate Professor, Pharmacist M. Sc. Anna Hristova Todorova, PhD

Medical University - Prof. Dr. Paraskev Stoyanov" - Varna

Regarding: Competition for the academic position "Associate Professor," specialty "Pharmaceutical Chemistry," the field of higher education 7. "Health and Sports," professional field 7.3. "Pharmacy"—one, announced in SG issue 07/23.01.2024 for the needs of the Faculty of Pharmacy to Department of "Pharmaceutical Chemistry" of the MU-Varna.

General information on the procedure:

By order № P-109-117/22.03.2024 of the Rector of MU-Varna, I was elected as a member of the Scientific Jury, and according to Protocol № 1 of the first meeting of the Faculty of Science, I was appointed to prepare a review in the procedure for holding an academic position "associate professor" in "Pharmaceutical Chemistry" specialty.

For the announced position in the above-mentioned competition, documents were submitted and only one candidate was admitted - Pharmacist M. Sc. Nadya Vasileva Agova, PhD.

The necessary documentation and evidentiary references for the competition have been submitted. The documents are precisely described and arranged by the applicant and meet the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its implementation, and the Rules for the Development of the Academic Staff at the University of Medicine - Varna and the criteria for holding the academic position "associate professor" laid down there.

Biographical data and professional development:

Pharmacist M. Sc. Nadya Agova was born in 1991 in Petrich. In 2016, she graduated as a Master of Pharmacy at the Faculty of Pharmacy of the Medical University of Varna.

From 2016 to 2019, she was a PhD student in an independent form of study at the Department of "Pharmaceutical Chemistry", faculty of "Pharmacy" at the MU-Varna. In 2019 achieved a PhD in the program "Pharmaceutical Chemistry" with the dissertation work on the topic "Preparation and characterization of bexarotene derivatives with potential biological activity".

Has acquired two specializations: "Analysis of medicinal products" in 2019. in Medical University - Sofia and "Toxicology and toxicological analysis" from 2023. at Medical University "Prof. Dr. P. Stoyanov" - Varna.

The academic development of chief assistant Agova started in 2016 as an assistant in the "Pharmaceutical Chemistry" department of the University of Varna. In 2020 she held the position of "chief assistant" in the same department until now.

Teaching and learning activities:

Chief assistant Nadya Agova teaches students from the specialty "Pharmacy" - Pharmacist M. Sc.. Conducts laboratory and seminar exercises in the field of Pharmaceutical Chemistry and the elective course "Chemistry of Antibiotics" for students in the regulated profession - Pharmacy. As well as the discipline "Quality and properties of the starting raw materials in cosmetics" for students of the specialty of the unregulated profession - "Cosmetology".

Co-authored 3 study aids for pharmacy students as follows: "Pharmaceutical Chemistry Practice Guide" and two task books: "Pharmaceutical Chemistry Test Problems for Pharmacy Students" Part I and II.

Chief assistant Agova has 8 years of teaching experience. From the study workload report presented, it can be seen that the candidate fulfills the set standard for horary with an average of 361 study hours/year for the last 5 years.

Scientific activity:

The scientific indicators presented Chief assistant Nadya Agova, according to the attached academic report, are as follows:

A1 - PhD work for the acquisition of a doctorate in the specialty "Pharmaceutical Chemistry" on the topic "Preparation and characterization of bexarotene derivatives with potential biological activity" - forms 50p. of the candidate according to the minimum national criteria.

B3 Habilitation thesis - monograph, with the title "Systematic review of the properties and action of nutritional supplements. Safety and quality" Nadya Agova, Svetlana Georgieva, MU- Varna, 2023. ISBN: 978-619-221-472-2. A separation protocol is presented, certifying the equal contribution of the two authors 50% / 50% respectively. The requirements for a monograph have been fulfilled and form 100p. according to the minimum national criteria.

G7 Articles and reports published in scientific journals, referenced and indexed in world-renowned databases of scientific information - 6 items are presented. Publications, which, according to data from the attached reference are published in Web of Science reference journals, form 82 points.

G8 Articles and reports published in non-refereed peer-reviewed journals or published in edited collective volumes - 17 issues – 157 points.

The presented publications under indicator D form 239 points, covering and exceeding the mandatory minimum of 200 points.

Outside of the minimum scientometric requirements for taking the academic position of "associate professor", 1 article was presented.

Chief Assistant Nadya Agova has 38 participations in scientific forums - of which 31 in the country (21 with reports and 10 with posters) and 7 participations in international conferences abroad.

The active participation of Chief Assistant Agova in scientific congresses and conferences shows a desire for public presentation and popularization of the results of the works and putting them up for discussion among the scientific community, which I admire.

Chief Assistant Nadya Agova has been cited in scientific publications six times. 2 according to indicator D10 (forms 30 points) and 4 according to indicator D12 (forms 20 points). The author has a total of 50 points in indicator group D, with which the candidate meets the minimum requirements of the University of Varna for this indicator.

In the academic report attached by the candidate, 3 publications are presented for the PhD acquisition. It can be seen that there is no repeat of articles with which Chief assistant Agova participated in the competition for "Associate Professor".

In total, the candidate covers the required minimum of 400 points according to the Rules for the Development of the Academic Staff at the University of Medicine - Varna for occupying the academic position "Associate Professor" in the professional field "Pharmacy" and exceeds it by forming a total number of 439 points according to the groups of indicators.

Chief Assistant Agova participated in 7 scientific research projects, 6 of which have been completed, which is an indicator of the gained experience as a researcher:

- Project № 17011/2017 г. "Synthesis and characterization of a new generation of retinoids". Funded by the "Science" fund of MU-Varna, in the position of "Administrative and financial manager" and "Researcher" (ended)
- Project № 18018/2018 "Determination of biological activity and antioxidant properties of neosynthesized bexarotene analogs". Funded by the "Science" fund of MU-Varna, (ended)
- Project №18019/2018 "Synthesis and characterization of new nitroimidazole derivatives with potential biological effect"; Funded by the "Science" fund of MU-Varna, (ended)
- Project with topic "Prediction of the toxicity of newly synthesized hydrazide and hydrazone derivatives with potential antineoplastic effect"; Competition "Research and artistic activity - 2019" University "Prof. Dr. Asen Zlatarov" - Burgas (ended);
- Project №19026 "Determination of the antimicrobial activity of newly synthesized nitroimidazole derivatives with potential application in transplantation medicine"; Funded by the "Science" fund of MU-Varna, (ended)
- Project №20008 "Investigation of the toxicity of bexarotene hydrazones by applying the *in vitro* and *in vivo* method"; Funded by the "Science" fund of MU-Varna, (ended)

- Project №23009 "Design, production and research of isatin hybrid molecules with suspected broad-spectrum antimicrobial activity and potential application in implantology"; Funded by the "Science" fund of MU-Varna, (current).

References certifying the participation of Chief Assistant Agova as a member of a research team on the specified projects are presented.

Evaluation of scientific contributions:

The monograph "A Systematic Review of the Properties and Actions of Dietary Supplements." Safety and Quality" is structured in three chapters: Overview and classification of nutritional supplements; Regulatory base, prohibited substances and contaminants in nutritional supplements; Dietary Supplement Market Trends and Attitudes.

It examines a current global public health problem - the rational use of nutritional supplements against the background of growing industrial production and distribution, the rich diversity of the market, and wide access for the population. The risks and benefits are affected according to the individual characteristics of the individual user: diet, use of drugs, presence of diseases, nutritional deficiencies, etc. The regulations regarding the production, distribution, and use are defined and the European, Bulgarian, and Russian legislation in this area is examined in detail. Emphasis is placed on substances prohibited for inclusion in dietary supplements, contaminants, and methods of analysis. Studies on the attitudes of users of nutritional supplements and the analysis of the eating habits of students in Russia and Bulgaria under the conditions of COVID-19 draw attention to the need for educational campaigns for healthy eating among the public.

The monographic work is intended both for specialists in various fields of medical and pharmaceutical sciences, as well as for the general audience with interests in healthy eating, dietetics, and the rational use of nutritional supplements. In this sense, it fills a gap related to the need for better knowledge and awareness of users for safe use.

Contributions from scientific research activity are prioritized in developments in the field of pharmaceutical chemistry and analysis in accordance with the announced competition.

- Scientific contributions include the developed three-step synthetic approach for obtaining new hydrazide-hydrazone derivatives of bexarotene; the structural characterization of the newly obtained compounds using instrumental analysis methods - IR-spectroscopy, ¹H-NMR-analysis and mass spectrometry; the development and validation of a rapid, precise and accurate HPLC method for the identification of bexarotene and its derivatives alone and in mixtures - publications (G7-1, G8-1, G8-4. Project №17011)
- - An approach was developed to predict the potential biological activity of newly obtained bexarotene compounds. By means of a software model of mathematical prediction, the activity was evaluated and the potential toxicity of the molecule was predicted. (Article G8-3, G8-9, Project №18018).

- A contribution point is the examination of the molecular properties and bioactivity of newly synthesized derivatives of bexarotene. (Article G7-2, G8-2, G8-7, G8-9, Project №20008, Project with contract №434/2019 - University "Prof. Dr. A. Zlatarov" - Burgas).
- The potential biological activity and antioxidant potential of newly synthesized structures, for which there is currently no literature data, was experimentally evaluated by means of a biological method. (Article G7-3, G8-10, Project №18018)
- Based on a comprehensive literature analysis of the development of retinoid therapy, the possibility of drug design of new compounds, a synthetic scheme was developed to obtain new derivatives of the third generation retinoid bexarotene. (Article G8-2, G8-11, G8-13, G8-14)
- As an original scientific contribution, the study of the antibacterial activity of a newly synthesized bexarotene derivative against clinical isolates of *Escherichia coli* and *Staphylococcus aureus* should be noted.
- In the context of the COVID-19 pandemic, the use and sales of macrolide antibiotics (article G8-8) and omeprazole and famotidine included as part of the therapeutic regimen for the treatment of COVID-19 have been tracked. (Article G7-6).
- The attitudes of consumers regarding the use of nutritional supplements have been studied. (Article G7-5).
- The scientific literature on the risk of liver damage with the use of dietary supplements was analyzed. (Article G8-15).

I believe that the studies and the related contributions from the research activity correspond to the scientific development of the candidate and the profile of the competition for the academic position of "Associate Professor" in the specialty "Pharmaceutical Chemistry".

Conclusion: Based on the provided documentation, the positive assessment of research and teaching activities, as well as the outlined scientific value of the presented works with scientific-theoretical and applied contributions, I have reason to consider that Nadya Vasileva Agova fully meets the requirements of the Law on development of the academic staff in the Republic of Bulgaria, the Regulations for its application and the Regulations for the development of the academic staff of the MU-Varna for the acquisition of the academic position of "Associate Professor". Based on the above, I express my support for her candidacy and strongly recommend to the honorable members of the Scientific Jury to award Chief Assistant Nadya Vasileva Agova, PhD the academic position "Associate Professor" in the field of higher education 7. "Health and Sports", by professional direction 7.3. "Pharmacy" and specialty "Pharmaceutical Chemistry".

Varna, 28.05.2024 г.

Assoc. Prof. Anna Hristova Todorova, PhD

Signature: .

Заличено на основание чл. 5,
§1, б. „В“ от Регламент (ЕС)
2016/679