TO

Assoc. Prof. Silvia Marinova, MD, PhD

Chairman of the Scientific Academic Panel

for a competition for taking up the academic position "Associate Professor"

announced in SG No. 07 of 23.01.2024

REVIEW

by Prof. Galya Tsvetanova Stavreva-Marinova, MD, PhD

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REGARDING: competition for taking up the academic position of "Associate Professor" in the field of higher education 7. Health and Sports, Professional field 7.1. Medicine, at the department "Pharmacology and Clinical Pharmacology, and Therapy", announced in SG No. 07 of 23.01.2024.

I present this opinion in my capacity as a member of the Scientific Jury, according to the Order of the Rector of the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna (No. R-109-99/22.03.2024) and the decision of the first absent meeting of the Scientific Jury from 04.04.2024.

PROCEDURAL MATTERS

The competition for the academic position of "Associate Professor" and the procedure for its holding are based on Art. 2b para 1 and 2 and art. 24 of the Act on Development of the Academic Staff in the Republic of Bulgaria; Art. 1a para 1, art. 2 para. 1, art. 53 and Art. 54 of the Rules for its application; Art. 123 and Article 125 of the Rule for the Development of the Academic Staff of Medical University - Varna (2018). I received in electronic form the necessary documents and materials under Art. 126 para. 1 and 2 of the Rule for the Development of the Academic Staff of Medical University - Varna.

The terms and conditions of the procedure are observed and complied with the regulations. The only candidate with PhD in Professional field 7.1. Medicine, specialty "Pharmacology (incl. Pharmacokinetics and chemotherapy)" is **Antoaneta Borisova Georgieva**, MD, PhD, Chief Assistant Professor in the department "Pharmacology and Clinical Pharmacology and Therapy".

I declare that I have no conflict of interest, including co-authorship with the candidate.

EDUCATION AND QUALIFIACATION

Chief Assistant Professor Antoaneta Georgieva graduated as a Master of Medicine at the Medical University "Prof. Dr. P. Stoyanov" Varna (Diploma No. 001022/26.11.2010) in 2010. Since 2012 she has been an assistant in pharmacology at the Department of "Preclinical and Clinical Pharmacology", MU - Varna. She was enrolled as a PhD student of individual form of study in 2015 in PhD program in Pharmacology /incl. pharmacokinetics and chemotherapy/ with the title of the thesis: "Psychopharmacological effects of phenolic acids in experimental pharmacological studies" with scientific supervisor Prof. Dr. Stefka Valcheva-Kuzmanova.She obtained the ESD "Doctor" in 2016 (Diploma No. 166/20.05.2016) and held the academic position of chief Assistant Professor in 2017. She has acquired a specialty in pharmacology and pharmacotherapy since 2020 (Diploma No. 024557/12.02 .2021, MUV series - 2021). She underwent additional training on the topic: Protection and humane treatment of experimental animals" (Certificate 075277, Faculty of Veterinary Medicine, Stara Zagora).

Antoaneta Georgieva speaks English and Russian. She is a member of the Bulgarian Society of Pharmacology and the Bulgarian Society of Clinical Pharmacology.

EVALUATION OF THE IMPLEMENTATION OF THE MINIMUM NATIONAL REQUIREMENTS AND SCIENTIFIC PAPERS

The implementation of the minimum national requirements is a condition for admission to the procedure for the acquisition of academic positions, as a specific requirement in the Regulations of MU-Varna is at least 80 points to collect from articles in journals, referenced and indexed in WoS and/or Scopus (indicator G.7). The table below summarizes by indicators and points the scientific production with which Chief Assistant Georgieva participates in the competition, according to an official academic reference prepared in the Library of the Medical University - Varna (No. № 55/21.02.2024).

Group of indicators	Scientific production	Score
A	PhD thesis "Psychopharmacological effects of phenolic acids in experimental pharmacological studies", MU - Varna, 201611	50.00
B	Habilitation thesis, monograph "Traditional Bulgarian spices devesil, savory, fenugreek/chimen - potential health benefits based on the content of polyphenols", MU Publishing House - Varna 2023	100.00
G.7	Articles in scientific journals in WoS and Scopus – **16**	129.60
G.8	Articles and reports published in journals with scientific review – 8	84.98
Total score G		214.58
D	Citations in scientific journals in WoS and Scopus – 7	105.00

In the competition, Dr. Georgieva participated with a monograph presented as a habilitation thesis and 24 papers, 21 of which were given as evidence necessary to meet the minimum national scientometric requirements (Reference No. 55/21.02.2024, Library, MU - Varna). There are 16 scientific works referenced in Web of Science and/or SCOPUS, 9 of which are extended abstracts with IF. The candidate is the first author of 9 of them and the second or third author of 9 of them; 19 of the publications are in English, and 5 are in Bulgarian. The impact factor of the publications and extended abstracts visible in WoS is 42.159, which is a testament to the quality of her research. Dr. Georgieva has an h-index of 3, according to SCOPUS, and an h-index of 4, according to Google Scholar. There are 10 citations to the name of Antoaneta Georgieva, including 7 citations of her work in scientific publications, referenced and indexed in Web of Science and/or SCOPUS, which brings her 105 points according to indicator 10 of group D of the evidence for covering the minimum national scientometric indicators.

The monograph "Traditional Bulgarian spices devesil, savory, fenugreek/chimen - potential health benefits based on the content of polyphenols" fully meets the criteria for a monographic work laid down in the Act on Development of the Academic Staff in the Republic of Bulgaria. It has significant scientific and applied importance, supporting the search for increasing the consumption of healthier and tastier food, by using new indications of natural products in culinary and medical practice. Based on a very extensive literature review, Dr. Antoineta Georgieva has summarized the most up-to-date and informative data on the plants *Levisticum officinale* (fallow, scallion, sage), plants of the genus *Satureja* (savory)

and *Trigonella foenum-grecum* (fennel), results of preclinical experiments and clinical trials. I especially want to note the high scientific style, and clearly defined summaries, which show the deep knowledge and erudition of the author. The information contained is up-to-date, useful, and reflects the high professionalism of the author, acquired in the course of her long experience as a teacher and researcher. "Traditional Bulgarian spices devesil, savory, fenugreek/chimen - potential health benefits based on polyphenol content" is a topical book intended for a wide range of readers. not only for specialists in the field of experimental pharmacology but also for those from other medico-biological specialties, students, and specialists.

During the period from 2012 to 2024, which includes 12 active research years, Dr. Georgieva made 34 publications and participated in the author's team of 4 teaching aids. 28 pcs were noticed. citations according to SCOPUS and 58 nos. according to Google Scholar.

OTHER SCIENTIFIC ACTIVITY

Dr. Georgieva has 24 participations in international scientific forums, 20 participations in national forums, and was a member of the research teams of 5 research projects, 2 of which were financed by the Scientific Research Fund of the Ministry of Education and 3 by the "Science" Fund, MU-Varna.

SCIENTIFIC CONTRIBUTIONS

Experimental studies of the effects of biologically active substances of plant origin are an essential part of the research work in the department, where the team has valuable achievements and recognitions. Dr. Georgieva, as a member of this team, has a significant scientific output, both in quantity and quality, on the discovery of new, beneficial effects of biologically active substances of natural origin in various experimental models of socially significant diseases, as well as in healthy experimental animals. The focus is on polyphenols, which are one of the most widely distributed plant compounds. The scientific interests and contributions of Dr. Georgieva can be summarized in 4 main areas:

1. *Elucidation of the pharmacological effects of various plants and isolated polyphenols (flavonoids and phenolic acids) in experimental models of diseases and conditions (monograph; articles G7.1, G7.2, G7.3, G7.5, G7.6, G7.7, G7.8, G7.10, G7.11, G7.15, G7.16, G8.1, G8.4, G8.5; additional publications 1-3)*

1.1. Anti-inflammatory and protective effects of the flavonoid fustin isolated from sumac wood were found in rats with carrageenan-induced paw edema (G7.1;

indomethacin-induced gastric ulcer; colitis induced by rectal administration of TNBS (G7.15) and paracetamol-induced hepatotoxicity (G7.16).

1.2. Protective effects of *Aronia melanocarpa* fruit juice were found in a model of estrogen deficiency induced by ovariectomy in rats (G7.2, G7.6, G7.7, G7.8, G7.11, G8.4), in a model of indomethacin-induced gastric ulceration in rats (G7.5); on the reduced motor activity of mothers in the postpartum period when pregnant rats are treated (G8.5).

1.3. Protective effects of chlorogenic acid were found in an ovariectomy-induced estrogen deficiency model (G7.3, G7.10); on the reduced motor activity of mothers in the postpartum period when pregnant rats are treated (G8.5).

1.4. The potential multiple health benefits of the traditional Bulgarian spices devesil (*Levisticum officinale*)(G8.1), savory (plants of the genus *Satureja*), and fenugreek/chimen (*Trigonella foenum-graecum*) due to their high content of polyphenolic compounds (monograph).

2. *Behavioral effects of polyphenols (flavonoids and phenolic acids) in healthy rats (G7.12, G7.13, G7.14)*

2.1. It was established that the pain threshold in healthy rats was not affected by the administration of the phenolic acids chlorogenic, ferulic and gallic and by the flavonoid quercetin after 7-, 14-, 21- and 30-day administration (G7.12).

2.2. An anxiolytic-like effect of gallic acid and quercetin was found in healthy rats after subchronic administration (14-, 21- or 30-day) (G7.13)

2.3. Gallic acid and quercetin improved memory and learning processes in healthy rats after subchronic administration (14-, 21- or 30-day) (G7.14).

3. *Study of changes in models of estrogen deficiency/osteoporosis (articles G7.4, G7.9, G8.3, G8.4)* - systematization of available data on behavioral changes in models of estrogen deficiency and the effects of various polyphenols in osteoporosis ; determination of changes in an ovariectomy-induced estrogen deficiency model in rats: anxious-depressive behavior, reduced pain threshold, obesity, dyslipidemia, presence of inflammation, slightly reduced bone mineral density, increased bone turnover.

4. *Adverse drug reactions (article G8.2)* – establishment and systematization of data on groups of drugs that can lead to hyperglycemia.

TEACHING ACTIVITY

According to an official reference Dr. Georgieva has more than 12 years of teaching experience in pharmacology. Participates in the teaching of pharmacology to students from the specialties "Medicine" (AEO and BEO) and Dental Medicine. With an annual study load of 360 hours, she has realized 495 study hours per year (official reference 112-73/15.02.2024). She is a member of the author's team of 4 published aids. The candidate's teaching activity corresponds to the requirements of the Regulations of the MU - Varna (Article 125, Paragraph 1, Item 3).

CONCLUSION

Dr. Antoineta Georgieva is presented in the current competition with a sufficient number of scientific works for holding the academic position "Associate Professor" according to the Law for Development of the Academic Staff in the Republic of Bulgaria and the Rules of Medical University – Varna. Her publications are thorough, targeted, and oriented in the field of experimental pharmacology. The scientific articles have a high proportion of personal contributions and contain theoretical and applied contributions. The candidate is a well-rounded specialist with accumulated high professional, teaching, and language competence, research skills, and a sense of responsibility. My reasons for this rating are:

- In terms of professional development, she has solid experience as a pharmacology teacher; excellent command of the English language; has acquired a specialty according to the announced competition; is a well-prepared and respected specialist;
- In terms of scientific activity, Dr. Georgieva exceeds the requirements; shows great scientific activity; exceeding the required number of citations, which indicates that the results of the scientific research provided by the author have been evaluated and recognized as contributing to the field of experimental pharmacology;
- Regarding the educational activity, there is a large educational workload and active participation in the educational process; participates in English language training of medical and dental students; co-authored a large number of teaching books; works actively with students.

Based on the submitted materials for the competition, as well as my excellent personal and professional impressions, I can confidently declare that I will support the selection of chief assistant Antoaneta Borisova Georgieva, MD, PhD for "Associate Professor" in the Higher Education Department 7. Health care and sports, Professional field 7.1. Medicine, for the needs of teaching pharmacology, Department of "Pharmacology and Clinical

Pharmacology, and Therapy", at the Faculty of Medicine of the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna.

28.04.2024

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Prepared by:

/Prof. Galya Stavreva-Marinova, MD, PhD/