

OPINION

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Member of scientific jury, according to order № P-109-319/29.07.2022 of the
Pector of MU - Varna

Concerning: Competition for taking up the academic position “Associate Professor” in field of higher education 7. Healthcare and Sports, professional field 7.4. Public health, specialty “Management of public health (Analysis of medicinal products)”, for the needs of Training sector “Assistant pharmacist”, Medical College – Varna, announced in SG №41/03.06.2022, with candidate Ch. Assistant Silvia Georgieva Mihailova, PhD.

General Characteristics of the Candidate

Silvia Georgieva Mihailova was born on 3rd March 1978 in the city of Varna. She completed her higher education with a Master's degree in "Pharmacy" at Sofia Medical University in 2003.

Since 2017, she has been a doctoral student with the Department of Chemistry at the University of Varna's Pharmacy Faculty. In 2019, she successfully defended her dissertation on "Synthesis and biological evaluation of SMAC-NT peptide conjugates with combined antineoplastic and analgesic action" and obtained the "Doctor" scientific and educational degree in the scientific specialty "Bioorganic chemistry, chemistry of natural and physiologically active substances", and in 2021 she acquired the specialty "Analysis of medicinal products" at Sofia Medical University.

For the period 2006 - 2010, she worked as a manager of the Farmahit Ltd. pharmacy in the city of Sofia, and from 2010 to 2013 she was the manager of the Megapharm 1 Ltd. pharmacy in the city of Varna.

In 2013, she started working as an assistant with the Medical College at the Varna Medical University, and since 2020 she has been the main assistant. At the same time, since June 2020, she has been the head of the "Assistant Pharmacist" Academic Sector at the Varna Medical University's Medical College.

She speaks English and Russian.

Ch. Assistant Silvia Georgieva Mihailova is a regular member of the Bulgarian Pharmaceutical Union and the Bulgarian Peptide Society.

Scientific research activity

According to all the indicated scientometric indicators, the publication activity of Chief Assistant Silvia Mihailova, PhD covers the normative requirements for the academic position "Associate Professor", laid down in the Rules of the Varna University for the implementation of the Law on the Development of the Academic Staff in the Republic of Bulgaria.

Chief Assistant Silvia Georgieva Mihailova, PhD participates in the competition with a total number of 23 scientific works on the list, 12 of which are in Bulgarian and 11 in English language. She is the author of the monograph "Peptides as medicine" and co-author of a teaching aid for midwives under the editorship of Associate Professor Diana Dimitrova called Non-drug Methods for Pain Relief during Childbirth, chapter - Pharmacological Methods for Overcoming Pain during Childbirth.

From the presented scientific works Ch. Assistant Mihailova is:

- Single author in 1 publication (monograph);
- First author in 2 publications;
- Second author in 8 publications;
- Third and subsequent author in 12 publications.

Five of the publications are referenced and indexed in world-renowned databases with scientific information (Web of Science, Scopus). The candidate also presents one publication outside the minimum scientometric requirements.

Also, 10 reports were presented at conferences and symposiums, 2 of which abroad and 8 in our country, with international participation. 5 participations in scientific forums with posters were also indicated, one of which was abroad.

The presented scientific works are evidence of the author's competence in the field of nutrition, oncology and rare diseases, prevention, peptide chemistry, public health and health management, as they address significant issues of knowledge and practice in the indicated fields.

From the attached reference, it is clear that the candidate has 13 positive citations in Bulgarian and foreign sources, which confirm the scientific significance and contributions to the scientific production of Chief Assistant Silvia Mihailova, PhD.

The papers are published in important journals such as Journal of IMAB, Varna Medical Forum, Scripta Scientifica Pharmaceutica, International Bulletin of Otorhinolaryngology, Journal of Medical College - Varna, International Archives of Integrated Medicine, International Journal of information research and review. These are the summarized results of a number of scientific studies, analyzes and evaluations.

Chief Assistant Mihailova works in topical and interesting fields, and her scientific research is mainly in the following areas:

- I. Prevention, management of diseases and health systems

- II. Peptide Chemistry
- III. Oncology and rare diseases
- IV. Foods and nutrition

The reading of the works outlines Silvia Mihailova as a specialist with scientific interests oriented mainly in the field of **prevention, management of diseases and health systems**. This thematic direction is the most thoroughly developed section in her research activity - 14 publications in connection with chronic non-communicable diseases of social significance, effective drug policy and the influence of new health-related technologies.

The advantages of peptide drugs over small molecule drugs and biotechnological proteins, as well as various methods of peptide modifications to increase the metabolic stability, bioavailability and pharmacokinetic properties of peptides, are shown through scientifically based facts. Publications in this area make it possible to systematize a number of new therapies in the treatment of socially significant diseases.

The effect of pharmacotherapeutic changes on additional cardiovascular and renal benefits following the introduction of new therapies in the treatment of type 2 diabetes mellitus was monitored.

Based on an in-depth analysis of the main errors that outpatients make with regard to prescribed drug dosage regimens, namely, suboptimal application of the dosage regimen (delay or omission of intake, intake of an additional dose), early discontinuation of therapy, late or non-initiation of prescribed treatment, it has been shown that pharmaceutical care can reduce both the number of errors and the costs caused by them.

The studies in the field of diabetes and breast cancer in the Municipality of Varna are of significant practical importance, as the results of the frequency of morbidity, the medicinal products used and the funds paid by the Regional Health Insurance Fund in Varna are presented. The effect of introducing effective screening programs and consultations for preventive medical care regarding the early detection, diagnosis and therapy of these diseases, as well as on the duration and quality of life, is shown.

Another direction in the works of Chief Assistant Silvia Mihailova is **peptide chemistry**. Theoretically, a dissertation on the topic "Synthesis and biological evaluation of SMAC-NT peptide conjugates with combined antineoplastic and analgesic action", as well as the monograph called "Peptides as medicine - Application of chemical methods in the synthesis and optimization of peptide medicinal products", aim to help students with their professional-practical training. In the applied aspect, the interests of Chief Assistant Mihailova are prominent in a number of publications related to certain modifications in the structure of peptides, the achievements of peptide chemistry and methods for improving the metabolic stability of peptide drugs. The developments are used in the training of students from the "Assistant Pharmacist" specialty in the disciplines "Pharmaceutical Chemistry", "Social Pharmacy and Pharmaceutical Legislation", and "Homeopathy".

Based on a thorough analysis of the therapeutic effects that can be achieved through various synthetic processes and are associated with certain modifications in the structure of the peptides, the strategic vision for the key role of peptides as an economically effective and safe alternative to modern small molecule drugs is formed.

Studies related to the design, synthesis and characterization of new peptides have been carried out, expanding the scope of knowledge in the field of peptide chemistry. The method of solid-phase peptide synthesis, on the basis of which 9 new peptide analogs of SMAC and neurotensin, and 3 peptide conjugates with combined antineoplastic and analgesic effects, has made a practical contribution.

Silvia Mihailova's interests in the field of "**Oncology and rare diseases**" are represented by 5 publications related to the development of effective approaches and means for timely diagnosis and adequate treatment of neoplastic diseases.

An analysis of the molecular characteristics and potential of short peptides and peptide mimetics as new therapeutic options for the treatment of oncological diseases and the control of oncological pain has been made. The preliminary screening for cytotoxic activity of native NT (8-13) by means of in vitro tests on two cell lines - MCF-7 (breast cancer cells) and 3T3 (non-cancerous cells) is of particular interest.

In the presented publications, the pharmacokinetic behavior and possible drug interactions in which RGD and NT(8-13) may be involved have been investigated. The influence of these sequences on the activity of the most common cytochrome P450 enzyme CYP3A4, which is responsible for most drug interactions, was investigated.

The analgesic activity of newly synthesized neurotensin analogs was investigated and a central mechanism for realizing an analgesic effect independent of opioid pathways was proven. The place of mycotherapy and fungitherapy in patients with oncological diseases is discussed and the advantages of beta-glucans on the immune system and their synergistic action when combined with chemotherapy and/or radiation therapy are indicated.

Silvia Mihailova's work in the field of "**Foods and nutrition**" is represented by 4 publications related to the terminological introduction, research and presentation of the concept of "functional food". Based on an in-depth study, the role of food in the prevention, treatment and rehabilitation of various diseases is shown, with an emphasis on those with a high disease burden for society.

Several groups of medicinal plants have been analyzed in the context of complementary and alternative medicine methods. The role of functional foods in the prevention and treatment of liver diseases, socially significant oncological and infectious diseases is shown.

My assessment of the scientific output of Chief Assistant Mihailova is positive and high, since the works contain certain scientific contributions to public health.

Ch. Assistant Silvia Georgieva Mihailova has active scientific profiles in: Google Scholar, ResearchGate and ORCID.

A reference is also presented for IF (4.400).

Ch. Assistant Silvia Georgieva Mihailova, PhD participates in five projects related to the main focus of her scientific interests.

Teaching activity

Chief Assistant Silvia Georgieva Mihailova, PhD participates in lectures, laboratory and seminar exercises at the Varna Medical College in the disciplines "Pharmaceutical Chemistry" and "Homeopathy", and also conducts educational practice and pre-diploma internship. The academic workload is as follows:

- for the academic year 2016/2017 г. – 695 hours;
- for the academic year 2017/2018 г. – 795 hours;
- for the academic year 2018/2019 г. – 747 hours;
- for the academic year 2019/2020 г. – 687 hours;
- for the academic year 2020/2021 г. – 835 hours.

These data show that the academic workload of Chief Assistant Silvia Mihailova covers and exceeds the University standard for a non-habilitated teacher of 324 hours.

As the chairperson of the Program Board within the "Assistant Pharmacist" Academic Sector, Chief Assistant Mihailova participates in the examination, discussion and adoption of all curricula for the disciplines included in the Curriculum of the "Assistant Pharmacist" specialty. She is directly involved in the development of the "Pharmaceutical Chemistry" and "Homeopathy" curricula.

Conclusion


Chief Assistant Silvia Georgieva Mihailova, PhD presents herself in the competition as a well-established and competent researcher and teacher in the field of public health and has a sufficient volume of teaching activity, experience and publications, which should be evaluated by the Scientific Jury.

The submitted documents from Chief Assistant Silvia Mihailova fully meet the minimum scientometric requirements contained in the Regulations for the Implementation of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Regulations for the Development of the Academic

Staff of the Varna Medical University for occupying the academic position "Associate Professor".

Taking into account the professional development and scientific performances of the candidate, I give my **positive** assessment for her election as "Associate Professor" and I strongly recommend the members of the Scientific Jury to award Chief Assistant Silvia Georgieva Mihailova, PhD the academic position "Associate Professor" in the field of higher education 7. Healthcare and sports, professional field 7.4. Public health, for the needs of the "Pharmacist Assistant" Training Sector at the Medical College with the Varna Medical University.

20.09.2022
Sofia

Member of the Scientific Jury: 
/prof. Tsv. Petrova-Gotova, PhD/