REVIEW

From

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Member of the Scientific jury based on an order No. R-109-513/30.11.2023 r. of the Rector of Medical University-Varna. According to the protocol of the first meeting of the Scientific jury held on 11.12.2023 r., I am assigned to write a review.

REGARDING: Competition for the occupation of the academic position "Associate professor", announced in State Gazette, issue **83/03.10.2023**, for the needs of the Department of Pharmacology, Toxicology and Pharmacotherapy, Faculty of Pharmacy at Medical University "Prof. Dr. P. Stoyanov" – Varna, field of higher education 7. Healthcare and sport, professional direction 7.3. Pharmacy, specialty "Pharmacology" on a full-time basis – one.

At the competition for "Associate Professor" in Medical University "Prof. Dr. P. Stoyanov" – Varna, only one candidate appeared - chief assist. prof. Maya Petrova Radeva-Ilieva, MScPharm, PhD.

The set of documents were prepared in accordance with the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB), as well as the Regulations for the Implementation of the LDASRB (RILDASRB) and the Regulations for the terms and conditions of acquisition of academic positions at the Medical University "Prof. Dr. P. Stoyanov" – Varna.

Biographical data

Maya Petrova Radeva-Ilieva was born on November 12, 1989. She finished her secondary education from Natural Sciences and Mathematics High School "St. Kliment Ohridski", Silistra in 2008. Then graduated in Pharmacy from Medical University "Prof. Dr. Paraskev Stoyanov", Varna in 2015 with honors and acquires the qualification "Master Pharmacist". In 2022 obtained the educational and scientific degree "Doctor" in the specialty "Pharmacology/incl. pharmacokinetics and chemotherapy/" at the Department of "Pharmacology, Toxicology and Pharmacotherapy", Medical University "Prof. Dr. Paraskev Stoyanov", Varna. **Dissertation title:** "Isolation and analysis of methylxanthine fraction, catechin fraction and total Bancha green tea extract and study of their influence on the pharmacokinetics of sildenafil in rats".

In the period from 01.2016 until 08.2022 holds the position of Assistant Professor, specialty "Pharmacology" at the Department of "Pharmacology, Toxicology and Pharmacotherapy", MU-Varna. Subsequently, she was appointed as a Chief Assistant Professor from 08.2022 until now to the same educational institution.

Specializations

2023: Acquired specialty "Pharmacology and Pharmacotherapy" at the Medical University "Prof. Dr. Paraskev Stoyanov", Varna

Foreign languages

English – B2 Certificate

Memberships:

- Bulgarian Pharmaceutical Union (BPhU)
- Bulgarian Association of Pharmacology, Clinical Pharmacology and Therapeutics (BAPCPT)

Teaching and learning activity

Chief assist. prof. Maya Petrova Radeva-Ilieva, MScPharm, PhD has accumulated about 9 years of experience in the specialty and 8 years of teaching experience as an assistant professor and chief assistant professor.

Scientific and publication activity

The candidate presents 20 scientific publications, 12 of which are in English and 8 in Bulgarian. 6 of the articles are in journals with an impact factor. Maya Radeva-Ilieva is the first author of 4 scientific publications. She also presents a habilitation thesis on the topic "Health benefits and risks of phytoproducts containing polyphenols" which deals with the current topic of the widespread and uncontrolled use of herbal products. The candidate's overall impact factor is 14,5. Currently, 19 citations have been found in the Scopus database (h index 2).

Maya Radeva-Ilieva participated in the writing of 3 teaching aids for pharmacy students. In addition, she took part in the development of two scientific projects funded by MU-Varna:

- "Study on drug interactions at biotransformation level"
- "Pharmacological study of a methylxanthine fraction isolated from green tea"

She also actively participates in 21 scientific forums in Bulgaria as well as in 4 abroad.

Original scientific contributions

According to its thematic orientation, the scientific production can be divided and summarized in the following 4 main directions:

1. Pharmacokinetics and drug interactions

In the presented publications, the research on the various aspects of **drug interactions** can be mentioned as the first significant scientific and theoretical

contribution. Based on the previously analyzed scientific information, the potential interactions between tyrosine kinase inhibitors and other drugs are summarized. In addition, the available data on the observed clinically significant interactions between medicinal products and green tea or epigallocatechin-3-gallate are also analyzed and systematized. It is also suggested that additional research should be conducted in order to reduce the risk of potential interactions. A study is presented on the role of the hospital pharmacist in predicting and preventing drug interactions in hospital settings as well as in subsequent outpatient therapy. The analyzed data clearly show the benefits and necessity of the involvement of the hospital pharmacist in the selection and follow-up of drug therapy.

The second scientific contribution is based on the author's provided data from **experimental studies**. The potential of plant extracts to inhibit the activity of drug-metabolizing enzymes *in vivo* was investigated, and the obtained results have a contribution to practice by indicating the occurrence of potential interactions when the investigated extracts are taken simultaneously with medicines. As a result, some extracts should be taken with caution. Some peptide analogs that have been tested for analgesic activity were also studied for their ability to inhibit CYP3A4 enzyme activity *in vitro*. The obtained results significantly enrich the knowledge about the pharmacokinetics of these compounds and would be useful in their future study and application.

2. Study of natural substances and probiotics

Scientific contributions are focused on the study of biological activity and organ-protective effects of plant extracts and probiotics as well as on the study of the qualitative and quantitative composition of plant extracts. In this direction, the information about the registered medicinal products obtained from marine organisms is summarized, which provides an opportunity for a comprehensive view on the development of marine pharmacology. In addition, two liquid chromatography methods were developed and validated and the first method was designed for the qualitative and assay analysis of caffeine, theophylline and theobromine. The second method was developed for the qualitative and assay determination of epigallocatechin-3-gallate, caffeine, catechin and

gallic acid in green tea samples. Both methods used are characterized by speed, sensitivity and reliability and could find application in the analysis of the studied compounds in samples of different origin. Some experiments are focused on the study of the organ-protective effects of plant extracts in experimental animals. The antioxidant activity of Bulgarian probiotic cultures in rats was also investigated. The developed experimental models may be applied in the study of the biological effects of other herbal and medicinal substances. The results of the conducted experiments with laboratory animals could serve as a basis for future studies of the organ-protective effects of the investigated extracts in humans as well as for their application as preventive agents.

3. Pharmacotherapeutic approaches and treatment of acute intoxications

The scientific-theoretical contribution is focused on analyzing some pharmacotherapeutic approaches and features of drug therapy in cancer and cardiovascular diseases. The advantages of the investigated drug groups in terms of efficacy and safety are shown. A systematic overview of the progress of targeted therapy in tumor diseases is also presented as well as future directions for optimizing cancer diagnosis and treatment. An article is presented that summarizes the analyzed scientific information regarding the use of intravenous lipid emulsion in the treatment of acute intoxications with lipophilic xenobiotics. Based on the data from the accumulated experience, it can be concluded that intravenous lipid emulsion may find a wider application in acute intoxications, apart from the currently recommended life-threatening conditions. In addition, in one of the articles is presented a clinical case in which the administration of intravenous lipid emulsion in a patient with acute organophosphorus pesticide intoxication was observed to improve neurological symptoms within a few hours. The dose of the intravenous lipid emulsion used is indicated as well as the method of administration, which may serve in clinical practice. These results have an important scientific-applied contribution to confirm the effectiveness and safety of intravenous lipid emulsion in the treatment of acute intoxications.

4. Clinical pharmacy and public health

Scientific-applied contributions have been achieved by the articles that examine various specific pharmacotherapeutic aspects related to the medicines that are included in Appendix No. 9 to Art. 17, para. 1 of Ordinance No. 28 of December 9, 2008 on the structure, order and organization of the work of pharmacies and nomenclature of medicinal products. A comprehensive and thorough review of literature data and documents was carried out. The drugs that are included in the list, but do not currently have an authorization for use in Bulgaria, are indicated. Furthermore, in the articles are mentioned drugs that have an authorization for use in Bulgaria but are not included in Appendix No. 9 although they are from the same pharmacotherapeutic group with drugs that are listed in the Appendix. The analyzed and summarized information is presented in 2 scientific publications and clearly show the need to update and supplement the list of drugs requiring special storage, thus recommendations were made for its renewal. The remaining 2 articles present author data from surveys among children conducted in the territory of the city of Varna. In connection with the surveys, special questionnaires with carefully selected questions were created. The survey method, incl. the prepared questionnaires may be applied to collect data on the quality of life of children with bronchial asthma as well as to assess the significance of some risk factors on disease development in childhood. The processed results can serve to identify risk factors for the disease, optimize therapy and improve patients quality of life.

CONCLUSION

In conclusion, I believe that chief assist. prof. Maya Petrova Radeva-Ilieva, MScPharm, PhD is a highly qualified researcher and lecturer. The scientific research and lecturing activities fully meet the announced direction of the competition as well as comply with the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB), the Regulations for the Implementation of the LDASRB (RILDASRB), and the qualitative and quantitative criteria for the development of the academic staff laid down in the Regulations of the Medical University "Prof. Dr. P.

Stoyanov" – Varna for the acquisition of the academic position "ASSOCIATE PROFESSOR".

As a result of the above, I give a **Positive Vote** and recommend to the members of the respected jury to choose chief assist. prof. Maya Petrova Radeva-Ilieva, MScPharm, PhD for occupying the academic position "ASSOCIATE PROFESSOR" at the Department of "Pharmacology, Toxicology and Pharmacotherapy", Faculty of Pharmacy at the Medical University "Prof. Dr. P. Stoyanov" – Varna, in the field of higher education 7. Healthcare and sport, professional direction 7.3. Pharmacy in the scientific specialty "Pharmacology".

Sofia,

12.02.2024

/Prof. Krum Stefanov Kafedjiiski, PhD/