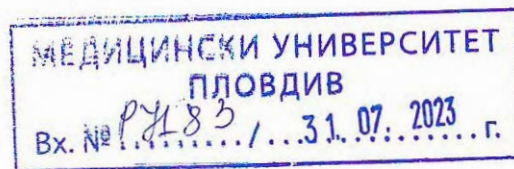


To

The Chairman of the Scientific Jury,
appointed by Order № R - 2006 / 13.07.2023
by the Rector of Medical University – Plovdiv
15A Vassil Aprilov blvd.
4002 Plovdiv

On your Protocol №1/ from 17.07.2023

(date of the 1st ...)



I present attached: Review

regarding the competition for the academic position of *Associate Professor*
in scientific specialty *Pharmacology (incl. Pharmacokinetics and Chemotherapy)*
announced for the needs of MU – Plovdiv, *Department of Pharmacology and Clinical
Pharmacology*
in the State Newspaper, issue №32/08.04.2023

Reviewer: Corr.-member Prof. Mila Vasileva Vlaskovska, MD, PhD, MSc
Scientific specialty/s *Pharmacology*
Department of *Pharmacology and Toxicology*, MF, MU Sofia

Procedural matters

In the competition, two positions are announced for the academic position "Associate Professor" for the needs of the Department of Pharmacology and Clinical Pharmacology, Medical Faculty of Medical University-Plovdiv and there are two candidates. One candidate is Darinka Slavtcheva Dimitrova, MD, PhD. I have no joint publications with the candidate.

I. SHORT BIOGRAPHICAL DATA AND CAREER DEVELOPMENT

Dr. Darinka Slavtcheva Dimitrova was born in Plovdiv in 1969. In 1987, she graduated from "Vasil Levski" high school in Plovdiv with a professional field of "Shorthand and Typewriting". In 1994, she graduated from the "Ivan Pavlovich Pavlov" High Medical Institute in Plovdiv with a Master's degree in Medicine. Since May 15, 1995, she has been working as an Assistant Professor in the Department of Pharmacology at the Medical Faculty of High Medical Institute in Plovdiv. Senior Assistant in the same department since March 15, 2001. She became Chief Assistant Professor in December 2004. She has two specialties: "Pharmacology, incl. Pharmacokinetics and Chemotherapy" from 2001 and "Clinical Pharmacology and Therapy" from 2020. Acquired Doctorate in 2013 at the Medical University of Plovdiv in the field of "Pharmacology, incl. Pharmacokinetics and chemotherapy" with the topic of the dissertation: "Comparative experimental study of the effects of cholinesterase inhibitors on models of impaired memory functions".

Responsible person for Scientific work in the Department of Pharmacology and Clinical Pharmacology for many years.

The scientific interests of Dr. Darinka Slavtcheva Dimitrova are in the field of experimental neuropsychopharmacology (learning and memory, cholinergic and GABA-ergic neurotransmissions, dementias, Parkinson's disease, epilepsy), and pharmacological screening of newly synthesized molecules. She actively participates in the "Erasmus+" program and has carried out several mobilities for the purpose of training and teaching in various European universities. She participated in a neuroscience course in Bucharest, Romania and a one-month specialization at the University of Murcia, Spain.

She is a member of the following organizations: Bulgarian Medical Union; Union of Scientists in Bulgaria, Plovdiv; Bulgarian Society of Pharmacology, Clinical Pharmacology and Therapy; European Association of Clinical Pharmacology and Therapy. She was also a member of the European Society of Neuropsychopharmacology.

She has five awards from European Congresses of Neuropsychopharmacology.

Very good level of written and spoken English and Russian languages.

II. OVERVIEW OF THE SUBMITTED COMPETITION DOCUMENTS

Dr. Darinka Dimitrova has submitted the following documents for the competition:

- Application to the Rector of MU–Plovdiv;
- Autobiography in European format;
- Notarized copy of the diploma for completed higher education;
- Notarized copy of an addendum to the higher education diploma;
- Notarized copy of the diploma for PhD acquisition;
- Certificate of internship in the respective specialty and reference for the occupied academic positions;
- Academic reference for the academic workload for the last 3 academic years;
- Copy of the last attestation sheet;
- Author's abstract of dissertation work for PhD degree;
- Habilitation work – monograph on the topic of Learning and Memory;
- List of publications in scientific journals, referenced and indexed only in Scopus and/or Web of Science;
- List of publications in non-referenced journals with scientific review or published in redacted collective volumes;
- List of citations and/or reviews in scientific journals, referenced and indexed only in Scopus and/or Web of Science with evidence from databases;
- List of citations and/or reviews in non-referenced journals with scientific review;
- Copy of the diplomas for the recognized specialties;
- Documents certifying participation in international, national and intra-university scientific projects;
- List of published university textbooks and university supplies with evidence material;
- Document, certifying training of specialists;
- Reference for original scientific contributions with supporting material;
- Reference-self-assessment for the fulfillment of the specific scientometric requirements;
- Declaration of originality and authenticity of the attached documents;
- Copies of publications in referenced and indexed journals;
- Abstracts of the presented publications in Bulgarian and English;
- Other documents – qualification courses, certificates, memberships;

- Completed card for NACID;
- Certificate of Proficiency in English.

III. SCIENCE AND RESEARCH ACTIVITY

Dr. Darinka Slavtcheva Dimitrova has participated in the competition with a total of 43 scientific works, as follows:

- Monograph on the subject of “Learning and Memory”, which is presented as the main habilitation work - 144 pages;
- 12 publications in indexed journals, in world-famous databases with scientific information (Scopus and Web of Science), 5 of which have an impact factor;
- 30 publications in non-referenced journals with scientific review or publications in redacted collective volumes.

In the 3 publications indexed in Scopus, Dr. Darinka Dimitrova is the first author.

In 18 of the publications in non-refereed journals with scientific review, Dr. Dimitrova is the first author, and in another 3 of the same category she is the independent author.

To the additional documents, Dr. Darinka Dimitrova presented a list of 42 participations in international scientific forums, 24 of which have extended abstracts with bibliography, in refereed international journals with an impact factor and 24 participations in national scientific forums.

Dr. Dimitrova's scientific research activity is also connected with active participation in several scientific projects that have been successfully completed: 2 international projects with European funding, 4 scientific projects at the national level and 4 intra-university projects, copies of which are attached as evidence from the contracts or a certificate from the leading institution.

Main thematic directions and scientific contributions

Dr. Darinka Dimitrova has comprehensively presented her scientific contributions in the following areas:

I. Contributions related to the pharmacological study of compounds with expected high activity, low toxicity and potential practical applicability.

1. The effects of 3 newly synthesized GABA receptor antagonists on the learning and memory processes of rodents were investigated (1 publication in a journal indexed in Scopus, 9 citations in Scopus).

2. The anticonvulsant effect of a newly synthesized valproic acid amide and its N-alkylamide derivative was established (1 publication in a non-refereed edition).

3. A neuroplastic effect of the organophosphate compound metrifonate was found in a rat model of hypoxia-induced memory impairment (1 Scopus-indexed journal publication and 1 extended abstract).

4. The effects of newly synthesized isoquinoline precursors with a papaverine-like structure on the learning and memory processes of rats, bioelectrogenesis and contractile activity of isolated rat stomach smooth muscles were investigated (2 publications indexed in Scopus, 2 extended abstracts).

5. Investigation of the effects of a newly synthesized synthetic derivative of vinca alkaloids (3R,16S-2-hydroxyethyl apovincamate, HAEPO) on learning and memory in Wistar rats (1 publication in a journal indexed in Scopus).

6. The phytochemical composition of Bray rhizome extract (*Tamus communis* L.) was determined. A local anti-inflammatory effect of the same extract was demonstrated in the "cotton pellete" rat test (2 publications in non-refereed publications and 2 participations in scientific forums).

II. Contributions related to the study and comparison of the effects of drugs for the treatment of dementia affecting the cholinergic system.

1. The effects of the first clinically introduced cholinesterase inhibitor, tacrine, for the treatment of Alzheimer's disease on learning and memory processes in rats with models of impaired memory functions were established (2 publications in non-refereed editions).

2. The effects of tacrine on the development of pentylentetrazol kindling and on the learning and memory processes of mice were established (1 publication in a refereed and indexed journal, 4 citations in Scopus).

3. An improving effect of donepezil on learning and memory processes was established, combined with good tolerability by experimental animals in various models of impaired memory (1 publication in a refereed journal, 28 citations in Scopus, 2 extended abstracts in journals with an impact factor).

4. The effects of the original Bulgarian preparation Nivalin (with the international name galantamine) on the learning and memory processes of rodents (rats and mice) were compared with those of other cholinesterase inhibitors - tacrine, donepezil, metrifonate and rivastigmine (1 publication in refereed and indexed in Scopus journal and 3 publications in non-refereed editions). The effects of galantamine alone have also been studied on active and passive learning tests in rats (2 publications in non-refereed publications).

5. Acetylcholinesterase activity in the cerebral cortex and hippocampus of rats with a diazepam model of amnesia treated with tacrine, rivastigmine and galantamine was determined (extended abstract in a journal with impact factor).

6. The effect of the cholinesterase inhibitor rivastigmine on rat models of impaired memory was studied (3 publications in non-refereed journals, 1 extended abstract). In two of the peer-reviewed publications, abdominal hypertension leading to ischemia was considered for the first time as a new model of impaired memory.

7. The most appropriate doses of the damaging agents to create different amnesic models have been established (3 publications in non-refereed publications).

III. Contributions related to the study and comparison of the effects of drugs for the treatment of dementia affecting the glutamatergic system.

The ameliorative effect of memantine (N-methyl-D-aspartate antagonist) on cognitive processes in rodents with a scopolamine model of amnesia was established and compared with that of the cholinesterase inhibitor rivastigmine (1 peer-reviewed publication, 2 extended abstracts and 7 citations in Scopus).

IV. Contribution related to the study of the effects of an antidepressant (enhancing monoaminergic mediation) on cognitive processes.

A highly pronounced enhancing effect on the learning and memory processes of rats of the monoamine oxidase inhibitor Moclobemide was found (1 publication in a refereed edition, 6 citations in Scopus, 1 extended abstract).

V. Contributions related to epidemiological studies.

1. The risk of poisonings caused by various toxicological agents in the adolescent population between 15 and 24 years of age in the Plovdiv region was investigated (1 publication in a non-refereed edition).

2. Pharmaco-epidemiological study of epileptic patients undergoing therapeutic drug monitoring (1 publication in a non-refereed edition).

VI. Contributions related to patient studies.

The effects of a low-calorie diet and a probiotic containing lactobacilli on various indicators of obese and prediabetic people were established (2 publications in a journal indexed in Scopus and 2 publications in non-refereed journals).

My comprehensive evaluation of the monograph, publications and scientific projects presented by Dr. Dimitrova is positive.

IV. EVALUATION OF THE MONOGRAPHIC WORK

The monograph presented as the main habilitation thesis is entitled "Learning and memory". The topic deals with an actual social problem, such as various memory disorders. As people's quality of life improves and the aging population in developed countries increases, so does the number of people who have cognitive problems. In less economically developed countries, an unhealthy lifestyle combined with stress leads to the manifestation of problems related to concentration of attention and memory impairment at a much younger age, around 70 years old. Dr. Dimitrova presents in detail the anatomical and physiological basis for memory, the mediator systems and the pathways for their influence. In this work, she also presents a part of her personal experimental experience over the years with some main groups of agents used in experimental pharmacology and in clinical practice. Dr. Darinka Dimitrova's monographic work may be of interest to medical students or young doctors, as well as to other readers who want to learn what techniques we can apply to learn more easily or how to quickly we recall already learned information.

My assessment of the presented monograph is highly positive.

V. REFLECTION OF THE CANDIDATE'S PUBLICATIONS IN NATIONAL AND FOREIGN LITERATURE

Dr. Darinka Slavtcheva Dimitrova significantly exceeds the normative requirements for the citation of scientific works (960 items according to the self-assessment table of citations in journals referenced in Scopus and/or Web of Science), having also presented citations in monographs and collective volumes with scientific review (40 points according to the self-assessment table), which reflects the international recognition of the candidate's scientific output.

VI. EDUCATIONAL AND TEACHING ACTIVITY

In the last 3 years, the total study load, including the hours of semester and state exams, significantly exceeds the norm of 360 study hours per year. The presented academic references for study credibility are: 2019/2020 - 413 study hours; 2020/2021 - 496 study hours; 2021/2022 - 618 study hours.

Dr. Darinka Dimitrova participated in conducting practical classes in Pharmacology for students of medicine, dentistry and nursing and practical classes in Clinical Pharmacology for medical students. As the person responsible for Research in the Department, she actively participates in the preparation of the documentation for the accreditation of the PhD program

in Pharmacology, preparation of the annual report on the research activity of the staff of the Department of Pharmacology and Clinical Pharmacology, and she is also leads the group of students with an interest in pharmacology.

Over the years, Dr. Dimitrova has had active research work with 11 medical and pharmacy students, leading to scientific output. Full-text publications with students - 7 issues, one of which is in a journal indexed in Scopus; 9 participations in international scientific congresses and conferences; 7 participations in national congresses and conferences. Dr. Dimitrova has presented a detailed list of publications and participation in congresses, as well as a list of medical students and pharmacists who are active participants. The candidate has actively worked with two doctoral students from the Department of Medical Physics and Biophysics, Faculty of Pharmacy of MU-Plovdiv and three doctoral students from the Department of Pharmacology and Clinical Pharmacology, with whom she has 2 publications in journals refereed and indexed in Scopus, 2 publications in non-refereed journals and joint participation in scientific forums.

Dr. Darinka Dimitrova participated in the author team of 5 textbooks on Pharmacology and Clinical Pharmacology and in 16 manuals on pharmacology for training students of medicine, dentistry, pharmacy, nurses, midwives and X-ray laboratory technicians.

VII. CRITICAL NOTES AND RECOMMENDATIONS

I have no critical remarks about the candidate. My recommendation is that she should continue her research activities in the field in which she has gained experience, enrich her work with the study of newly synthesized compounds and maintain publication activity to popularize the result of her work.

VIII. OVERALL ASSESSMENT OF THE CANDIDATE'S COMPLIANCE WITH THE MINIMUM NATIONAL REQUIREMENTS AND SPECIFIC REQUIREMENTS OF MU - PLOVDIV

Dr. Darinka Slavtcheva Dimitrova **fully covers and significantly exceeds** the minimum national requirements under art. 2b, par. 2 and 3, respectively the requirements under article 2b, par. 5 of Development of Academic Staff in the Republic of Bulgaria Act (DASRBA) and the specific requirements of MU – Plovdiv, defined in the Academic Development Regulations (**Table 1**).

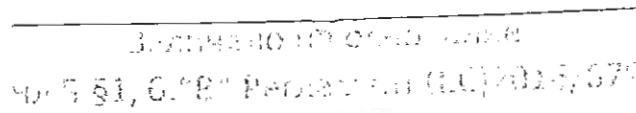
Table 1. Minimum required points by group of indicators for the academic position ASSOCIATE PROFESSOR

GROUP OF INDICATORS		POINTS FOR "ASSOCIATE PROFESSOR"	CANDIDATE POINTS
A		50 points	50 points
B		100 points	100 points
C		220 points 15 articles, 10 of which in journals referenced in Scopus and/or Web of Science, including 5 articles with IF	589.8 points 42 articles 12 in journals referenced in Scopus and/or Web of Science 5 articles with IF
D		200 points 10 citations in journals, referenced in Scopus and/or Web of Science	1000 points 64 citations in journals, referenced in Scopus and/or Web of Science 4 citations in monographs and peer-reviewed collective volumes
E		80 points 2 scientific projects (including intra-university projects) acquired specialty	321.6 points 10 scientific projects (incl. 4 intra-university projects) acquired 2 specialties Pharmacology Clinical Pharmacology and Therapy 5 university textbooks 16 university workbooks responsible for training specialists
F	Academic workload (lectures and practical classes)	150 points (for the last 2 years X 0.5 p/hour)	499 points for the last 2 years - 998 hours only practical classes
	Academic position	200 points (senior asst. professor - 100 p. for 1 year)	1850 points senior asst. professor –18 years 6 months
TOTAL		1000 points	4410.4 points

IX. CONCLUSION

Dr. Darinka Slavtcheva Dimitrova **meets** the mandatory and specific conditions and scientific criteria indicated in the DASRBA and the Academic Development Regulations in MU - Plovdiv for the academic position "ASSOCIATE PROFESSOR". This allows me to confidently suggest to the members of the esteemed scientific jury to vote **positively** for the acquiring of the academic position "ASSOCIATE PROFESSOR" by Dr. Darinka Slavtcheva Dimitrova in the field of higher education 7. Healthcare and sports, professional direction 7.1. Medicine and scientific specialty of Pharmacology (incl. Pharmacokinetics and Chemotherapy) for the needs of the Department of Pharmacology and Clinical Pharmacology, Faculty of Medicine at Medical University - Plovdiv.

Sofia,
July 2023

Reviewer: 
Corr.-member Prof. Mila Vlaskovska, MD, PhD, MSc