

REVIEW

from: Prof. dr. Anna Naydenova Tolekova, PhD

director of Medical college, Trakia university

subject: competition for "Assoc. Professor"

field of higher education: 4. Natural sciences, mathematics and informatics

professional direction: 4.3. Biological sciences

scientific specialty: "Physiology"

According to order R-2010/11.10.2023 of the Rector, Prof. Dr. Marijana Murdjeva, I have been appointed as a member of a scientific jury in a competition for the academic position of "Associate Professor" in the scientific specialty "Human Physiology" at the Department of "Physiology" ", MU - Plovdiv.

The only candidate for the announced position is Dr. Petar Ivanov Hrishev, MD.

1. General presentation of the received materials

The complete set of electronic materials presented by the candidate is in accordance with the Law on the Development of the Academic Staff in the Republic of Belarus, the Regulations for the Implementation of the Law and the Regulations for Academic Development at MU-Plovdiv (2021).

2. Analysis of the candidate's career profile.

Dr. Petar Hrishev graduated in medicine in 2013 at the Faculty of Medicine of the "Ivan Petrovich Pavlov" Medical University - Plovdiv. Since 2014, he has been appointed to the position of assistant in the "Physiology" department. In 2018, he successfully defended his dissertation thesis on "Functional, hormonal and clinical-chemical aspects of diet-induced metabolic syndrome in male and female rats under conditions of submaximal training" and obtained the educational and scientific degree "PhD". In the same year, he acquired the specialty "Physiology". In 2020, he held the academic position of Assistant Prof in the department. He speaks English at a very good level. He has excellent abilities to work with various computer programs, necessary for both his teaching and scientific activities.

3. Evaluation of the teaching activity.

Dr. Hrishev is an outstanding young teacher at the Physiology Department of the MU-Plovdiv. Over the past three years, his academic load has increased progressively, from 952.2 hours to 1304.8 hours. His main educational activity for the last academic year 2022-2023 is related to conducting practical classes and seminars with medical students - 776 academic hours and dental medicine – 171 hours. In addition, he leads a lecture course at the Medical College of the MU - 12 hours of and 24 hours at the rehabilitators. In addition, he conducts practical classes with the rehabilitators - 8 hours and with the assistant pharmacists - 16 hours. In Faculty of Public Health, he conducts a lecture course on the DNI specialty - 12 hours. It also participates in the conduct of semester exams. To this, we must add his significant extracurricular employment in the form of consultations and preparation of various educational materials, as well as his commitment as a person in charge of scientific and information activities related to the electronic education of students. The disciplines taught by Dr. Hrishev require the teaching of a large volume of material and the ability to put a different emphasis depending on the type and specificity of the relevant course. Dr. Hrishev is also a co-author in a number of teaching tools - 19 in number, published by the staff of the department. He participated in the publication of the Manual for practical exercises for students of medicine, dentistry and pharmacy in Bulgarian and English, three editions in a row. He is also a co-author in the preparation of collections of test questions in physiology for Bulgarian- and English-speaking students. The high recognition by the students of his qualities as a teacher, his nomination as the best teacher in two consecutive years, completes the picture of an inspired and motivated young teacher with high pedagogical skills, psychological competences and personal qualities.

- *The above-mentioned evidentiary material gives me the reason to give a positive assessment to Dr. Hrishev according to the educational and teaching activity indicator.*

4. General characteristics of the presented scientific works / publications

Scientific production The author's scientific pursuits are distinguished by their topicality, thoroughness and are focused on one of the most important problems of the modern world, namely the metabolic syndrome and related disorders. Scientific production of the candidate in the competition for "docent" includes 39 scientific publications, of which the majority - 21 were published in refereed and indexed editions in world databases (15 with quartile and 6 - without), and 18 were published in non-refereed editions. The candidate has also submitted a monograph in which he shared his research and observations on obesity, metabolic syndrome, endocrine activity of adipocytes and experimental models related to these abnormalities. It is the metabolic syndrome and its influence on the expression of endocrine cells secreting leptin, ghrelin and adipokines in

combination with the change in their plasma concentration that is the focus of Dr. Hrischev's publication activity. This socially significant problem, the candidate has developed both in various experimental models and in female patients. The studies devoted to the metabolic syndrome in female patients established correlational interdependencies between the main criteria for the diagnosis of MS: morphometric changes, clinical-chemical indicators and arterial pressure and the changes in the hormonal constellation of leptin and NGF, adiponectin, and for the latter the correlation was negative. The identified changes are the basis of the etiopathogenesis of MS and the associated cardiovascular complications. Dr. Hrischev's experimental work is distinguished by professionalism, precision, imagination and a combinatory approach. For the purposes of his research, he developed an experimental model in which a dietary regimen was used that mimicked human nutrition by consuming food rich in carbohydrates and lipids. The duration of the experiment was 16 weeks, sufficient for the development of MS and its accompanying changes, and part of the rats were subjected to physical stress. Parameters analogous to those of the patients were investigated: morphometric indicators, clinical-biochemical profile and constellation of inflammatory cytokines and hormones with regard to the regulation of nutrition and the development of metabolic disorders. The use of an animal model provides a number of advantages, including obtaining a much more complex picture of MS and its complications, and the results could be extrapolated to humans. Dr. Hrischev's contribution regarding ghrelin and its receptor is of particular importance. For the first time, a differential presentation of the ghrelin receptor in hepatocyte membranes was established in an experimental rat model subjected to the combination of a high-lipid and high-carbohydrate diet. This definitely proves the possibility of ghrelin acting directly on hepatocytes as well as its involvement in the pathogenesis of NAFLD. In addition to the development of the problem with Ghrelin, the author found a high degree of presentation of the receptor in the atrium and fundus part of the stomach, which enriches our knowledge of the para- and autocrine regulation of the secretory activity of the endocrine cells of the gastric mucosa. Ghrelin's role in metabolic regulation is illustrated by the low levels obtained in MS rats. Also of interest are the results illustrating the presence of sexual dimorphism in the response of rats to the combined effects of physical activity and dietary restriction.

Dr. Hrischev's interest in MS extends not only to the establishment of various correlation dependencies between the studied parameters, but also to the effects of non-pharmacological methods of influencing MS. It studies the impact of physical activity, balancing the dietary regime and their combination and

finds their marked beneficial effect. Induction of type 1 diabetes by the nitrosourea streptozotocin is associated with inflammation, oxidative stress, and dyslipidemia. The candidate used this model and investigated the effect of two prebiotics. The obtained results confirm their antioxidant effect. Dr. Hrishev used the pinealectomy-induced melatonin deficiency model to track the age-dependent effects of the hormone on a range of functions.

Monograph

The accumulated rich experience as a researcher and experimenter is the basis of the written monograph on "Obesity and related pathological conditions in man and experimental animal models". It is of interest to a very wide audience because it brings together the knowledge of the metabolic syndrome, the hormonal constellation related to it and the most relevant animal models that can be used to study MS.

Citations

An objective indicator of the significance of Dr. Hrishev's scientific output is the citation rate of his publications. As of the date of submitting the documents for the competition, he has submitted 28 citations, of which 25 are in publications referenced in Scopus and Web of Science. Of these, 22 are publications and 3 monographs. Only 3 of the citations are in non-refereed publications. The publication dedicated to the expression of leptin, adiponectin and NGF in patients with metabolic syndrome has caused great interest. It is cited in 13 sources referenced in global databases. The H-index reported in parallel on Scopus and Google scholar is 2.

Impact factor

The total impact factor of the candidate's full-text publications is 14.669.

Scientific projects

The scientific asset of the candidate is supplemented by his participation in the project activity. Dr. Hrishev participated as a researcher in 6 scientific projects, 5 of which were financed by the budget subsidy for science of MU-Plovdiv, and one was financed by the National Institute of Scientific Research.

Participation in the scientific events

The candidate actively promotes his results among the scientific community. He participated with announcements in 28 international forums abroad and in Bulgaria and in 14 national ones. Scientific contributions In the report on his contributions, Dr. Hrishev grouped them thematically into 10 separate groups concerning the metabolic syndrome in patients, in animal models, serotonin, ghrelin, prehypertension, triptans, melatonin deficiency, effect of two prebiotics on a type 1 diabetes model, lipoprotein lipase, mast cells and toxicity of plants from the Bulgarian flora. I accept the contributions

thus formulated by the candidate, but I believe that they would be better classified as original and corroborative.

Scientific indicators Table of the applicant's indicators

Group of indicators	Minimal requirements	Candidat's indicators
A	50	50
B		
C	100	100
D	220	227
E	50	50
F	50	100,52
G	560	1310,9
Total	1030	1838,42

All the above-mentioned facts unequivocally show that the quantitative indicators of the candidate exceed those required by the Regulation on the occupation of academic positions, Rules for the structure and activity of MU-Plovdiv. The publication of the research in authoritative Bulgarian and international publications, as well as the high citation rate, show the interest, popularity and positive assessment of the scientific community regarding the candidate's research. The analysis of my presented scientific works allows me to give a high assessment of the candidate's scientific activity.

Conclusion

The candidate in the competition has submitted a sufficient number of scientific works published after the materials used in the defense of the ONS "Doctor". In scientific developments, there are a number of contributions of an original nature that have received international recognition, some of which have been published in prestigious journals with an impact factor.

Based on the above, I express my convinced opinion that Dr. Petar Hrishev meets all the requirements of ZRASRB and the Qualitative and quantitative criteria for the development of the academic staff, listed in the Regulations of the Medical University - Plovdiv.

I strongly suggest to the respected members of the Scientific Jury to award Dr. Petar Hrishev the academic position of "ASSOCIATE PROFESSOR" in the scientific specialty "Human Physiology" at the "Physiology" department, MU - Plovdiv.

30.10.2023

Prof. Anna Tolekova

