

To Scientific jury,  
defined by Order R-109-469 / 05.11.2021  
of the Rector of the Medical University  
"Prof. P. Stoyanov" – Varna  
Prof. Valentin Ignatov, MD, PhD

On your protocol N 53 / 28.10.2021

I present attached:

## OPINION

on dissertation for the award of educational and scientific degree "Doctor"

by Assoc. Prof. Deyan Lyudmilov Dzhankov, MD, PhD, Associate Professor at the Department of General and Clinical Pathology, Forensic Medicine and Deontology at MU "Prof. Dr. Paraskev Stoyanov" – Varna

Appointed a member of the Scientific Jury / order N: P-109-469 / 05.11.2021 of the Rector of MU "Prof. P. Stoyanov" – Prof. Dr. Valentin Ignatov, MD

Field of higher education 7. Health and sports. Professional direction 7.1 Medicine. Scientific specialty 03.01.03 "Pathoanatomy and cytopathology".

Topic: "Expression of tetraspanin markers in benign hyperplasia and prostate cancer"

Author: Lyuben Lyudmilov Stoev

Form of doctoral studies: full-time form

Department: General and Clinical Pathology, Forensic Medicine and Deontology

Scientific adviser: Prof. Maria Tsaneva, MD, PhD

### I. Brief biographical data on the candidate's career development

Dr. Lyuben Lyudmilov Stoev graduated from the First Language High School in Varna in 2010 and graduated with a master's degree in medicine at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna in 2016. In the same year he began his professional career as an intern at the Department of General and Clinical Pathology, MHAT "St. Marina", Varna, and in 2017 he was also appointed as an assistant at the Department of General and Clinical Pathology, Forensic Medicine and Deontology at MU "Prof. Dr. Paraskev Stoyanov" - Varna.

As an assistant, Dr. Stoev participates in the academic work of the Department, conducts practical classes in all taught disciplines, including the English language program.

Dr. Stoev shows special interest in the pathology of the male reproductive system, which explains his enrollment as a regular doctoral student in 2019 on the topic "Expression of tetraspanin markers in benign hyperplasia and prostate cancer". In 2021 he acquired a degree in General and Clinical Pathology. In connection with his dissertation he published two articles in Bulgarian journals and participated with a report at a national scientific conference on Pathology.

Dr. Stoev is a member of the Bulgarian Society of Pathology, the European Society of Pathology (ECP) and the International Society of Urological Pathology (ISUP).

### II. General performance of the candidate

The presented materials on electronic media and paper meet the requirements of the Regulations for the development of the academic staff at MU Varna from 2018 under the Procedure for acquiring ESD "Doctor" at MU

Varna. The doctoral student passed the exam for doctoral minimum in the specialty "General and Clinical Pathology" on 28.09.2020 with a very good grade. The required scientometric indicators are covered. The doctoral student was expelled with the right to defense by Order N: P-109-469 / 05.11.2021. of the Rector of Mu-Varna.

### **III. Dissertation evaluation**

The dissertation on "Expression of tetraspanin markers in benign hyperplasia and carcinoma of the prostate gland" is well structured with distinct main elements: literature review, aim and objectives, research materials and methods, results, discussion, conclusions, contributions and bibliography. It is written in 115 standard pages and is illustrated with 48 tables and 38 figures, and the references include 194 titles, of which 4 in Cyrillic and 190 in Latin.

The dissertation topic is well chosen, analyzing a current problem in oncopathology - molecular biology and pathology with the search for biomarkers expressed in tumor tissue in order to predict the biological behavior of the second, and in some countries the first in frequency in the male sex prostate cancer.

The literature review is comprehensive, up-to-date, and focused on a thorough discussion of the epidemiology, risk factors, morphological characteristics with prognostic and predictive parameters, and treatment modalities of prostate cancer.

Despite major advances in this field of medicine through the early diagnosis of prostate carcinomas due to the introduction of screening with the testing of tumor markers such as prostate-specific antigen, locally advanced and metastatic neoplasms of the prostate gland are a serious therapeutic problem with regard to their stratification according to risk of progression and death.

A good option from a morphological point of view for the prognosis of these tumors is the study of molecular biomarkers with prognostic and predictive potential, which could be the proteins-tetraspanins (CD9 and CD151) used in this study in relation to prostate adenocarcinoma.

In search of such an approach, the PhD student has set himself the ambitious task to study immunohistochemically the expression of the mentioned biomarkers in tumor cells and their possible correlation with tumor aggressiveness in terms of invasive growth and metastasis. Also, the relationship between the difference in expression of non-tumor cells with neoplastic cells, as well as the correlation of the latter with the clinicomorphological parameters of tumors was investigated.

The stated aim is clearly and specifically defined. The formulated tasks are logically connected and feasible. The methods used are up-to-date, consistent with the aim and objectives.

The results are systematically described, logically arranged in the order of obtaining them. The obtained results are original. In the discussion a thorough comparison of the obtained results with the data published in the literature is made. The conclusions are clearly formulated, and some of the contributions of the dissertation are of a practical-applied nature.

### **IV. Evaluation of publications and personal contribution of the PhD student**

Dr. Stoev is the author of 2 full-text publications in Bulgarian journals, being the only author in one of them and the first author in the second publication, he also participated as the first author in a scientific conference on Pathology related to prostate adenocarcinoma.

### **V. Abstract**

The abstract of the dissertation is prepared in accordance with the requirements of the Regulations of the Academic Staff of MU-Varna, reflecting adequately and sufficiently the state of the studied problem, the set aim and experimental tasks, the methods used for their practical implementation, the results obtained, their analytical description and interpretation of own data, as well as the author's conclusions and contributions.

**VI. General assessment of compliance with the mandatory conditions, quantitative criteria and scientific-metric indicators, according to the Law on the Development of Academic Staff in the Republic of Bulgaria and the Regulations for its application.**

The quantitative scientometric criteria for the PhD degree have been met, in accordance with the LADRB, the Regulations for its application and the Regulations of MU-Varna - a total of 30 points is required: indicator D (publications and reports) -  $30+10 = 40$  points.

**Conclusion**

As a member of the scientific jury, I give a positive evaluation for the acquisition of the scientific degree "PhD" by Dr. Lyuben Lyudmilov Stoev. The submitted dissertation, abstract and published scientific works meet the requirements of the Law on the Development of Academic Staff of the Republic of Bulgaria (LADRB) and the Regulations of MU-Varna. The dissertation addresses a scientifically and clinically relevant problem, and the conclusions drawn have potential for future research in the field.

22.11.2021

Assoc. Prof. Deyan Dzhankov, MD, PhD

