OPINION

of Prof. Dr. Dimitar Stefanov Kadiysky, Doctor of Medical Sciences, Institute of Experimental Morphology, Pathology and Anthropology with Museum (IEMPAM) at BAS, Georgi Bonchev Str., bl. 25, 1113 Sofia;

Member of the Scientific Jury at a competition for the academic position of Professor by Order № 1155 / 21.05.2021 of the Rector of the Thracian University, Stara Zagora

Subject: Conducting a competition for the academic position "Professor" under the procedure for holding the academic position "Professor" in the scientific specialty "Anatomy, Histology and Embryology", field of higher education 7. Health and Sports, professional field 7.3. Medicine, for the needs of the Medical College, Thracian University - Stara Zagora, announced on the website of the Thracian University.

One candidate participates in the competition for professor - Associate Professor Dr. Tanya Todorova Kitova, Doctor of Medical Sciences, Associate Professor in the Department of Anatomy, Histology and Embryology of the Medical Faculty at the Medical University - Plovdiv and Associate Professor at the Medical College, Thracian University - Stara Zagora.

The materials presented to me by the candidate (in electronic media) are in accordance with the national regulatory requirements for holding academic positions and are in accordance with the specific requirements of the regulations of the Medical College and the Thracian University - Stara Zagora. All required documents are available.

I. Career profile of the candidate

Associate Professor Dr. Tanya Todorova Kitova, Doctor of Medical Sciences, graduated in medicine (1977-1984) as a master at the Medical Faculty of the Medical University - Plovdiv with honors (Diploma № 007400/02. 03. 1984).

The subsequent professional and academic development of the candidate includes the following stages. From 1984-1990 she was an assistant in the Department of Anatomy, Histology and Embryology, Medical University, Plovdiv, from 1990 to 1993 she was a senior assistant in the same department, and since 1993 she has been assistant. In 2015 she was elected to the academic position of Associate Professor at the Department of Anatomy, Histology and Embryology (Diploma № 038 D - from 20.04.2015), where she holds the same position so far. In parallel, Associate Professor Tanya Kitova, MD since 2020 - until the current procedure is an associate professor at the Medical College at the Thracian University - St. Zagora.

Associate Professor Tanya Kitova acquired in 1989 a degree in Anatomy, Histology and Cytology (Diploma № 33685 / 03.01.1989), and in 2011 acquired a degree in Fetopathology and Pathology of the Placenta at the Université Paris Diderot - Paris 7 France. Memoire: "*„A propos*

de 12 cas observes au service d, embryofoetopathologie de Centre de Maternite et de Neonatologie de Tunis. Diplome interuniversitaire de pathologie fœtale et placentaire, Paris,

In 2012 she received a qualification in statistics at the Medical University - Plovdiv "Statistical software package SPSSv.17.0" (Certificate № 0008).

In the following 2013 she acquired "Doctor" degree in the scientific specialty: Anatomy, histology and cytology after defending a dissertation on the topic: "Associated anomalies in fetuses with a neural tube defect." (Diploma № 033 DM from 10.01.2013)

In 2018 - acquired the Academic degree "Doctor of Science" in the scientific specialty: Anatomy, Histology and Cytology. The dissertation in this case is on the topic: "Congenital hydrocephalus with lethal outcome of the fetus" (Diploma № 010 - DMN from 19.07.2018).

In her teaching and research activities, Associate Professor Kitova uses English, French and Russian (written and spoken) at a very good level.

Specializes and visits many European laboratories and universities, including specialized research sites outside the EU, such as (from 2006-2009) - Center of Maternity and Neonatology of Tunisia (Service d'embrio-feotopathologie), from 01. 10. 2013 to 30. 12. 2013 Université Médicale de Hanoi, Medical University of Karagadan Kazakhstan, from 03.05.2019 to 03.06.2019 - Medical University of Yerevan Armenia, directly related to the study of specific material from the research activities of the candidate.

The attached reference for the candidate's workload covers the required legal framework and the range of teaching activities of Associate Professor Kitova is wide: includes practical exercises in Anatomy, Histology and Embryology with students of medicine, dentistry, pharmacy, nurses and midwives; lecture courses in Anatomy, Histology and Embryology, lectures on Anatomy and Histology of rehabilitators, medical laboratory assistants, assistant pharmacists and medical cosmetics at the Medical College of the Thracian University, participation in exams in Anatomy, Histology and Embryology, consulting assistance to students and individual research work with students led to publications in journals with impact factor.

The candidate's career academic development includes successfully defended three dissertations:

1. "Associated anomalies in fetuses with a neural tube defect" - year of defense 2013. Supervisor Prof. Dr. St. Sivkov dm, and scientific consultant Prof. Dr. Sumeya Siala Geiji dissertation for “Doctor” degree.

2. “On the basis of 12 observations in service d, embryofoetopathologie de Maternity Center and Neonatology de Tunisia. Memoir “*„A propos de 12 cas observes au service d, embryofoetopathologie*, Paris, 2012. Director of Memoir Prof. Anni Laquerrièrem Consultant: Prof. Gaigi Soumeya - Year of Defense 2018.

3. Dissertation for "Doctor of Science": "Congenital hydrocephalus with lethal outcome of the fetus" 2018.

Several research projects (among them there are projects funded by the Medical University - Plovdiv, Erasmus and including funded by the Alexander von Humboldt Foundation) complement the academic growth of Associate Professor Kitova. These are:

1. Project "Mechanisms of differentiation of progenitor cells during development in the central nervous system in humans" funded by the Alexander von Humboldt Foundation, Germany

2. NORE Project № 2018-1-PO01-KA202-049189 under the Erasmus + program. KD 2

Head of internal university (MU - Plovdiv) projects:

1. Project № NO - 03/2015 "Fetal and placental pathology"

2. Project № NO - 07/2017 „Fetal morphology. Fetal brain development. Physiology and pathology of the nervous system "

3. Project № NO-16/2020 "Fetal morphology. Fetal brain development. Physiology and pathology of the nervous system ".

II. General description of the submitted materials in the competition

The candidate applies detailed, precise and systematized documentation, which presents her as an established promising scientist with indisputable indicators of her professional and academic growth. The overall creative path of Associate Professor Dr. Tanya Kitova, PhD, Dsci, is focused on scientific problems in the field of pathomorphology, incl. feto- and placental pathology (neural tube defects - NTD, congenital hydrocephalus, associated anomalies in fetuses with NTD), morphological approaches in diagnosis - prenatal and screening of directing predictors to various anomalies of the nervous system, fetopathological possibilities for establishing the causes fetal death, as well as modern therapeutic approaches related to the determination of data for termination of pregnancy on medical reasons.

Much of the research work of Associate Professor Kitova is devoted to genetic and enzymo-histochemical studies related to neuromorphology, neurochemistry and in general the microanatomical features of important structures in the central nervous system (CNS) and the body. The candidate's macromorphological studies (physical anthropology) are specifically linked again to the pathology of the organism.

Associate Professor Kitova participated in the competition with a total of 129 scientific papers, of which publications in peer-reviewed journals (visible in Scopus and Web of Science) - 34; in referenced and indexed in other world scientific databases in journals with Impact factor - 18, 11 chapters from a monograph with a separate bibliography, reports in scientific journals - 42 and 15 abstracts in refereed journals. This includes participation in 4 monographs and 5 textbooks.

The participation of the candidate in various scientific events is registered in congresses, conferences and symposia: total number 71 (abroad - 44; in Bulgaria - 27).

The attached reference from NACID (National Center for Information and Documentation) certifies reflected in the databases (Web of Science, SCOPUS, etc.) number of citations abroad - 25; in our country 45 or TOTAL - 70. The total impact factor of the publication activity of the candidate is 19,853.

Here is the place to mention that many of the candidate's publications are in prestigious scientific journals such as *Prenatal Diagnosis*, *Pteridines*, *Neurosurgery* and others. with a relatively high impact factor.

The scientometric analysis of the research activity is visually presented by Associate Professor Tanya Kitova, which shows that it fully covers the requirements of the Regulations for the application of in the Academic Staff Development Act of Republic of Bulgaria, adopted by Council of Ministers 122 / 29.06.2018 and effective from 06.07.2018. ., effective at the time of the announcement of the competition in the State Gazette and of course at the time of submission of the documents. By all indicators it meets the required minimum and exceeds the number of points.

III. Evaluation of the scientific works of the candidate

Due to the limited scope of my opinion, I will briefly present the main original scientific and applied contributions of the candidate.

The areas of research of the candidate are mostly related to micro- and macro- morphological examinations of defects, malformations and anomalies in the development of the neural tube and internal organs. The microanatomy of cerebral vessels, some structural features of the central and peripheral nervous system have been studied from the standpoint of the dynamics of pathomorphological changes in them. An important object of research by Associate Professor Kitova is vascular pathomorphology. Part of the candidate's research activity is also dedicated to physical anthropology and represents a significant contribution to macromorphology. These studies are directly related to the frequency of pathological changes in adults.

The contributions from the research presented by Associate Professor Kitova are grouped into four main areas:

1. Contributions in the field of study and diagnosis of neural tube defects (NTD), malformations of the CNS and internal organs.

2. Contributions to the study of the anatomy of cerebral vessels, central and peripheral nervous system and diseases related to their damage.

3. Contributions in the field of vascular pathology.

4. Contributions in the field of anthropology.

I will not dwell on all groups, but I will point out some extremely important and interesting studies relevant to medical practice.

In the group of fetopathological studies, Associate Professor Kitova has presented to the attention of scientists and specialists morphological studies of rare pathologies (bordering on

casuistry!) important for successful prenatal diagnosis. Here I can mention e.g. studies of Di George syndrome and Dandy-Walker malformation. Contributions are also presented with respect to more common genetic abnormalities (trisomies 21, 13 and 18, as well as the HO chromosomal monosomy) associated with the occurrence of intrauterine death and stillbirth. A case of a new phenotype of Turner syndrome has been presented for the first time in the world literature. Contributions of importance for the diagnosis are the indicated possibilities of the fetal MRI examination for the precise specification of the location and the degree of germination of the placenta accrete in the myometrium and the detection of congenital anomalies of the CNS and internal organs. The refinement of pathognomonic fetopathological symptoms in the diagnosis of trisomy 21 and tuberous sclerosis can also be considered an important contribution from the work of the candidate.

The established macro- and microanatomical variations of: *cartilago supratrochlearis dorsalis*, high yield of *n. ischiadicus*, two-headed *m. piriformis* and general onset of *a. inferior glutea* and *a. glutea superior* of *truncus glutealis* and *arcus bovinum* and persistent infrarenal segment of *v. cava inferior*, are morphoanatomical contributions that help to avoid complications in possible surgical interventions. Through conclusions in the field of physical anthropology, a relationship between variations in head circumference and internal organ abnormalities (reproductive and cardiovascular defects, renal abnormalities and abdominal wall abnormalities) was sought and found, and predictors of the presence of a nerve defect were specified.

Associate Professor Tanya Kitova has successful developments in the field of monitoring and evaluation of the quality of higher education and e-learning in medical universities, as well as for some social aspects of distance learning during the COVID-19 pandemic.

IV. Overall conformity assessment

My overall assessment of the candidate's compliance with the mandatory conditions and mandatory quantitative criteria in terms of scientometric indicators according to Academic Staff Development Act in the Republic of Bulgaria and the Regulation for holding academic positions in MU - Stara Zagora is positive.

V. Conclusion

Based on the materials presented to me in the competition for professor, I find that the candidate associate professor Dr. Tanya Todorova Kitova, Doctor of Medical Sciences, is a distinguished scientist, specialist with significant original fundamental and applied scientific results and contributions, some of which despite their importance theoretically important potential for practical application in the prognosis and diagnosis of fetopathology affecting the early fetal development.

The scientific and applied nature of her morphological research is manifested in a wide range of research approaches, creating modern diagnostic and prognostic possibilities applicable in medical practice.

The scientific production of Associate Professor Kitova is of sufficient volume and quality. As can be seen from the materials presented at the competition, the candidate has developed

extremely important scientific areas of micro- and macromorphology, and its results are characterized by a high degree of application in medical diagnostics, prevention and practice. She has invested precision in a wide range of teaching activities and in the implementation of established research projects.

I believe that Associate Professor Dr. Tanya Todorova Kitova, Doctor of Medical Sciences fully meets the requirements of the relevant regulations for holding the academic position of "Professor" in "Anatomy, Histology and Cytology". The minimum national indicators for academic growth of the Academic Staff Development Act of Republic of Bulgaria and its Regulations have been met, as well as the conditions and procedure for acquiring scientific degrees for holding academic positions at the Medical University - Stara Zagora.

All this gives me enough reason to convincingly recommend to the esteemed Scientific Jury to vote positively for the proposal to the Academic Council of the Thracian University, Stara Zagora, Associate Professor Dr. Tanya Todorova Kitova, Doctor of Medical Sciences, to be elected to the academic position of "Professor". in the scientific specialty (code 03.01.02) "Anatomy, histology and cytology".

Prepared the opinion:

Signature:

12.08.2021 Prof. Dr. Dimitar Kadiysky, MD