

FOR THE ATTENTION OF MEMBERS
OF THE SCIENTIFIC JURY DETERMINED
BY ORDER R-109-142/23.02.2023 of the RECTOR OF MEDICAL
UNIVERSITY "PROF.DR. PARASKEV
STOYANOV", VARNA

Subject: Documents for participation in a competition of the Medical University of Varna (announced in the State Gazette issue 102/23.12.2022) for holding the academic position "Associate Professor" in the specialty "Virology", professional field 4.3. Biological sciences, field of higher education 4. Natural sciences, mathematics and informatics for the needs of Department of "Microbiology and virology", Faculty of Medicine and Laboratory of Virology of University Hospital "St. Marina" Varna, pursuant to art. 4, para. 1 and para. 2 of the Law on the Development of the Academic Staff of the Republic of Bulgaria and art. 57, para. 1 and para. 2 of the Rules for Academic Staff Development at the Medical University – Varna of Dr. Zhivka Stoykova Demireva - Kalcheva, D.B.

According to the minutes 81/06.02.2023 of a meeting of the Faculty Council of the Faculty of Medicine at MU-Varna and by Order R-109-142/23.02.2023 of the Rector of MU-Varna I have been appointed a member of the Scientific Jury (NJ). According to the minutes 1/06.03.2023 of the first meeting of the National Assembly, I have been appointed to prepare an opinion on the revised procedure for occupying the academic position, with the only candidate Dr. Zhivka Stoykova Demireva - Kalcheva, D.B.

STATEMENT

by Assoc. Prof. Dr. Lilia Ivanova Ivanova, MD, PhD, Associate Professor IMDL "City Lab"
Varna

Brief biographical data:

Dr. Zhivka Stoykova Demireva-Kalcheva was born on 24.11.1977 in Varna. She graduated from the III High School of Mathematics and Natural Sciences "Academician Metodiy Popov" - Varna (profile - biology with advanced English language learning) in 1996.

Acquired a master's degree in medicine at the Medical University "Prof. Dr. Paraskev Stoyanov"- Varna in 2002.

She worked successively as a resident in the Emergency Centers of Dobrich and Varna, in the Department of Hygiene and Emergency Medicine - MU-Varna as a certified assistant, in the Department of Microbiology and Virology - Varna as a senior expert - until 2007. Since 19.03.2007 - Assistant Professor at the Department of Microbiology and Virology, Faculty of Medicine, MU-Varna.

Since 29.01.2009, she was appointed as a physician-assistant in the Laboratory of Virology at the University Hospital "St. Marina" - Varna. Since 17.06.2019 till now she is a senior assistant at the Department of Microbiology and Virology and a doctor - senior assistant at the Laboratory of Virology at the University Hospital "St. Marina" - Varna.

Dr. Zhivka Stoykova's professional and academic development includes obtaining a medical degree in Virology in 2013. In 2018, she obtained the educational and scientific degree of Doctor after successfully defending her dissertation on "Seroepidemiological and molecular genetic studies of cytomegalovirus infection in groups at risk" - Diploma 305/21.12.2018.

She participates in various types of training courses in virology and biology: a course on Real-time PCR for virus diagnostics in collaboration with BIO-RAD, France, NCVDPB - Sofia, attends all theoretical and practical seminars and courses of the compulsory program for specialization in virology at NCVDPB - Sofia. The course "Quantitative Real-time PCR Analysis- Application in Infectious Diseases Diagnostics" in cooperation with the company Progen, the course "Stem Cell Transplantation" VSD, with the supervisor Prof. Dr. Igor Reznik at the University Hospital "St. Marina"- Varna, Gene expression regulation: a computational point of view" National program "European Research Networks", Introductory Computational Biology course" National program "European Research Networks'.

She has increased her knowledge of English, computer literacy and pedagogical skills in the following courses: the English language course "Business Advanced Council of Europe Level C1", the training module "Working with SPSS" at the Medical University - Varna, the course Pedagogical qualification of trainers from medical institutions - University Hospital "St. Marina"- Varna.

She speaks English fluently, Russian - at a very good level and German - at a beginner level.

Dr. Stoykova participates in 4 scientific projects, 3 of which to the Science Fund of MU-Varna and 1 - to the BMA (Program for grant funding of scientific project of young doctors, postgraduates, full-time PhD students, young doctors up to 35 years of age), In one of the projects she is the principal investigator (2016), in one project - leader (2017), and in two - participant (2016 and 2019).

The teaching activity of Dr. Zhivka Stoykova Demireva-Kalcheva is significantly above the required minimum. For the last years she has between 280 and over 300 hours of annual teaching load with practical classes and lecture course with the students in the faculties of medicine, dentistry and pharmacy at MU-Varna in the discipline "Microbiology and virology", taught in Bulgarian and predominantly in English.

Science metrics:

In the period 2007 - 2023 Dr. Stoykova has developed 36 scientific papers in co-authorship and 1 scientific paper as an independent author. Seven of the publications have IF (impact factor), 23 - SJR factor, 6 have been published in other indexed journals and 1 - in a collection of scientific papers. She participated in a total of 20 international and national scientific forums with 28 papers and poster presentations.

The academic transcript of the candidate for associate professor Dr. Zhivka Stoykova Demireva-Kalcheva in the current competition includes: an abstract of a defended dissertation on "Seroepidemiological and molecular genetic studies of cytomegalovirus infection in risk groups" (indicator A1 - 50 points), scientific publications in journals, refereed and indexed in world-known databases of scientific information (Web of Science and Scopus), equivalent to a habilitation thesis

and corresponding to Q3 according to the quartile system - 10 scientific publications (indicator B4, articles B4.1 to B4. 10 - 150 points, with the required 100 points), scientific publications in journals refereed and indexed in world-known databases of scientific information (Web of Science and Scopus) - 14 scientific articles (indicator D7), published book chapter - 1 scientific article (indicator D8) - total indicators D5 - D10 - 210 points (required 200 points).

The author has been cited in a total of 25 scientific articles (Indicator „Д11“ - 50 points). A total of 26 full-text scientific articles have been submitted, 25 in co-authorship and 1 - as an independent author - 10 (indicator „B4“), 15 (indicators „Г7“ and „Г8“), full-text publication in a scientific journal outside the minimum scientific metric requirements for the position of Associate Professor, refereed and indexed in world-renowned databases of scientific information (Web of Science and Scopus) - 1 (10 points).

Evaluation of research activities and contributions:

The candidate Dr. Zhivka Stoykova Demireva-Kalcheva has developed a diverse research activity in the period 2013 - 2022. The main topics of the scientific publications are grouped in 6 areas:

1. A large-scale **serological screening on the prevalence of CMV and EBV** in the general population and in different at-risk population groups in the region of Northeastern Bulgaria for a prolonged period of observation was performed (articles C4. 6.; C4. 7.; C4. 8.; D7. 8.). The current seroprevalence of these two chronic viral infections is determined and characterized in detail and the dynamics compared to previous studies are analyzed. The prevalence of these viral infections is largely related to the socio-economic status and health literacy of the population. The influence of age and sex on the onset of primary CMV and EBV infections has been defined, as well as the bimodal (bipartite) pattern of primary EBV infection. The study and the results of surveillance of different at-risk groups - women of reproductive age, pregnant women and newborn children - are highly significant. Higher seroprevalence in women of childbearing age was found compared to previous studies (over 80%), which necessitates the introduction of prenatal screening of pregnant women due to the possibility of infection of the fetus and newborn child with more distant consequences. The estimated population risk of intrauterine transmission of CMV is 7% for the Varna region.
2. Additional laboratory diagnostic methods for some herpes virus infections have been introduced and applied to support clinical practice, increasing the possibilities for interpretation of results according to the clinical symptomatology of patients (articles C \ „B4.2“.; „B4.3“.; „B4.9“.; „Г7.4“.; „Г7.11“). Using the classical and basic serological tests for the determination of herpes virus infection (CMV IgG and EBV VCA IgG), their relevance as a starting point for further innovations has been established. An outstanding contribution is the use of **various complementary laboratory methods**, whose capabilities are thoroughly analyzed in the scientific publications presented. The IgG avidity tests for the age of CMV infection, anti EBNA 1 to differentiate acute from pre-existing EBV infection, immunoblot to define acute EBV infection and PCR techniques in immunocompromised patients and neonates aid diagnosis and prognosis.

The use of non-invasive clinical saliva material in PCR analysis of suspected neonatal CMV infection is an original and a first for the country, the results of which enable the timely initiation of specific treatment.

3. A serious scientific contribution is the study of the role of some of the latent viral infections in patients with oncohematological diseases and in immunocompromised patients (articles „B4.1.“; „B4.5.“; „Г7.3.“; „Г7.6.“; „Г7.13.“; „Г7.14.“; „Г8.1.“). The established high seroprevalence and respectively infectivity in the general population with CMV and EBV unequivocally reflects the need to introduce into routine practice **methods to detect reactivation of these latent viral infections in patients under immunosuppression due to the underlying disease, after solid organ and hematopoietic stem cell transplantation.**

In immunodeficiency, this reactivation leads to a disease with a much longer course and a complicated outcome. The application of PCR techniques in different groups of at-risk patients proves that this is the method of choice for monitoring the severity of infection and determining specific treatment. The importance of additional serological diagnostic tests such as anti-EA-(D) IgM and anti-EA-(D) IgG in different groups of immunocompromised patients is analyzed.

The importance of BKV in morbidity after organ or tissue transplantation has been defined using a PCR technique. It has been unequivocally confirmed that the virus should be considered especially in any case of hematuria in these high-risk patient groups.

4. Viral hepatitis continues to preoccupy the scientific community both diagnostically and therapeutically. Research in the field of acute and chronic viral hepatitis is presented in relevant articles (article „B4. 4.“; „Г7.1.“; „Г7. 5.“; „Г7. 9.“; „Г7.12“ and a single group 3 article - beyond the minimum requirements). Research in the field of viral hepatitis is extremely thorough and covers many aspects of infections with some hepatotropic viruses: a thorough analysis of occult hepatitis B in patients with liver dysfunction using serological and PCR techniques has been performed.

Postvaccinal and presumptive postexposure immunity to HBV of a large cohort of healthcare workers was studied. An interesting phenomenon of increased incidence of hepatitis A hospitalizations (11%) during the COVID-19 pandemic is discussed in comparison with the previous two years (5% and 4%, respectively). Virologic responses during antiviral therapy of patients with chronic HBV/HDV hepatitis were evaluated.

A higher than the regional and national average prevalence of HBsAg and anti-HCV positivity was found in patients with non-Hodgkin lymphomas, which may be a significant risk factor facilitating and exacerbating the development of these diseases. The dominant variant in the epidemiologic pattern of HCV chronic hepatitis in Northeastern Bulgaria has been identified. Genotype 1b is prevalent in patients with chronic liver disease in the region.

5. **Studies on the epidemiology of SARS-CoV-2 infection** and some aspects of laboratory diagnosis in the context of the pandemic are reported in 3 relevant articles (articles C4. 10.; D7. 2.; D7. 7.). The dynamics of COVID-19 in a large hospital-based study for the first two years of the pandemic are analyzed. A detailed analysis of laboratory experience in dealing with suspicious COVID-19 results in the PCR technique is made.

6. The review on the clinical manifestation of newly diagnosed HIV infection in patients of University Hospital "St. Marina"- Varna (article „Г7.10.“) and the study of the most frequent symptoms leading to the need for diagnostic clarification of HIV seropositivity, as well as the analysis of the most frequent co-infections in patients living with HIV is a contribution to the clarification of the seroepidemiological setting of this infection and the risk factors leading to its acquisition.

The candidate Dr. Zhivka Stoykova Demireva-Kalcheva submits for the present competition as a major part of her scientific research and practical activity contributions distributed in several areas listed above.

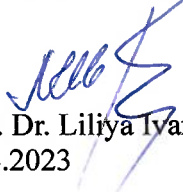
I fully accept the submitted scientific papers and references that the candidate for Associate Professor presents because:

1. Contains results based on personal investigations useful for research, laboratory diagnosis and clinical practice, especially in the field of chronic and latent viral infections.
2. Present consistent and in-depth information on the regional distribution of a wide range of viral agents and the laboratory diagnostic options for determining the status of viral infection and the need for specific antiviral therapy in immunosuppressed and immunocompromised patients.
3. They provide new data on the diagnostic capabilities of congenital cytomegalovirus infection and define a predictive risk for its acquisition on a regional scale that can be applied nationwide.
4. Demonstrate scientific production and teaching activities that meet the quantitative requirements of the Academic Development Act and the Implementing Regulations of MU - Varna.

Membership in scientific and professional organizations at home and abroad:

- Bulgarian Medical Association
- Bulgarian Association of Virologists
- Bulgarian Association of Microbiologists

Conclusion: based on the materials provided to me for the preparation of an Statement on the candidate for AD "Associate Professor", after a careful analysis of all the documents, I accept as fully suitable the candidacy of Dr. Zhivka Stoykova Demireva-Kalcheva, taking the liberty to kindly recommend the distinguished members of the Scientific Jury at MU-Varna to vote positively, as I myself will do.

Signature: 

Assoc. Prof. Dr. Liliya Ivanova, M.D., Ph. D
Varna 30.04.2023