

To the members of the Scientific Jury,  
determined by Order No. P-109-  
142/23.02.2023  
of Prof. Dr. St. Georgiev , d.m.  
Deputy Rector "Career Development"  
Medical University Varna

## **OPINION**

by Associate Professor. Ivaylo Alexiev Ivanov dv,  
head of the National Reference Confirmatory Laboratory of HIV  
National Center of Infectious and Parasitic Diseases

for an announced competition for the occupation of an academic position "ASSISTANT  
PROFESSOR" in professional direction 4.3. Biological sciences area of higher education 4.  
Natural sciences, mathematics and informatics, announced in  
State Gazette, no. 102 / 23.12.2022

Dear Members of the Scientific Jury,

For participation in the competition announced by the Management of the Medical University,  
"Prof. Dr. Paraskev Stoyanov" - Varna documents were submitted from Chief Assistant  
Professor Zivka Stoykova Demireva-Kalcheva MD.

The candidate has provided documents and materials for participation in the competition that  
meet the requirements of the Law on the Development of the Academic Staff in the Republic  
of Bulgaria and the Regulations for the Development of the Academic Staff at the Medical  
University "Prof. Dr. Paraskev Stoyanov" - Varna.

### **Biographical data of the candidate**

#### **Education and academic development**

- Zhivka Stoykova Demireva-Kalcheva graduated from secondary school at the III  
Science and Mathematics High School "Acad. Metodiy Popov" - city of Varna (profile  
- biology with extended study of English), a graduate of 1996.
- She completed his higher education in 2002 at the Medical University "Prof. Dr.  
Paraskev Stoyanov" - Varna with a Master's degree in Medicine with the professional  
qualification of a Doctor.

- Acquired medical specialty Virology in 2013 at Medical University "Prof. Dr. Paraskev Stoyanov" - Varna.
- In 2018 at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna defends his doctoral degree with a dissertation on " Seroepidemiological and molecular genetic studies of cytomegalovirus infection in risk groups."

### **Professional and academic development**

- From 17.06.2019 until now, she has been working at UMBAL "St. Marina" Varna in the Laboratory of Virology in the position of Physician - Chief Assistant.
- From 17.06.2019 until now, she works at the Medical University "Prof. Dr. P. Stoyanov" - Varna, FM, Department of "Microbiology and Virology" in the position of Chief Assistant.
- 29.01.2009-16.06.2019 she was assigned to UMBAL "St. Marina" EAD, Varna, in the Laboratory of Virology in the position of Doctor - assistant.
- 19.03.2007-16.06.2019 she was appointed at the Medical University "Prof. Dr. P. Stoyanov" - Varna, FM, Department of "Microbiology and Virology" in the position of Assistant.
- 01.07.2006-18.03.2007 she was appointed at RIOKOZ Varna, Department of Microbiology and Virology as Senior Expert.
- 15.09.2004-30.12.2004 she was appointed at the Medical University "Prof. Dr. P. Stoyanov" - Varna in the Department of Hygiene and Disaster Medicine in the position of Honorary Assistant.
- From 16.02.2004 to 30.06.2006, she was appointed to the Medical Center of Varna as a Resident Physician.
- 01.03.2003-15.02.2004 she was appointed to the CSMP, Dobrich, as a Resident Physician.

At the time of application for the current competition for associate professor, the candidate ch. Assistant Professor Zivka Stoykova Demireva-Kalcheva PhD, has more than 15 years of work experience and 10 years of experience in the specialty - Virology. From 2007 to 2021, she has conducted 9 courses related to her professional interests and career growth.

### **Evaluation of the candidate's scientific activity and contributions.**

In the scientific activity of Chief Assistant Dr. Zhivka Stoykova Demireva-Kalcheva dm, several main directions stand out in the research of viral infections and related diseases, most of them are related to the family of herpes viruses, and in addition, studies of pathogens and from other virus families. Most of the candidate's research follows her dissertation topic and infections in immunocompromised patients, including Epstein -Barr Virus (EBV), Cytomegalovirus (CMV) and Varicella zoster virus (VZV), and in addition to them, Dr. Zhivka Stoykova Demireva-Kalcheva dm conducts studies on other viruses and diseases, among which

are the hepatitis viruses HBV, HCV, HDV, as well as HIV and BKV and, last but not least, the newly emerging SARS -CoV-2, which led to a global pandemic.

### **Research interests and contributions of the candidate**

The main scientific interests and contributions of the Chief Assistant. Dr. Zhivka Stoykova Demireva-Kalcheva dm is on a study of the seroprevalence of herpes virus infections, diagnostic possibilities for these viruses, infections in immunocompromised patients, acute and chronic viral hepatitis, some aspects of SARS-CoV-2 infection, as well and observation of clinical manifestations when HIV infection is established.

Representative seroepidemiological studies were conducted on the spread of CMV and EBV among the population in the region of northeastern Bulgaria, both in the general population and for different risk groups, including pregnant women and newborn children. The estimated population risk of intrauterine transmission of CMV for the Varna region, as well as the age and gender of the primary EBV infection, were determined. The current seroprevalence of these two viral infections is characterized and the dynamics compared to previous studies are analyzed.

avidity tests, immunoblot and RT-PCR, have been analyzed to help diagnose, as well as to determine the age of the infection. The use of non-invasive clinical saliva material for PCR analysis was applied, which enables the timely initiation of specific treatment.

The need to introduce RT-PCR in the detection of reactivation of latent viral infections (CMV, EBV, BKV) in immunosuppressed patients after transplantation has been studied. The importance of additional serological diagnostic tests in different groups of immunocompromised patients was analyzed.

Various aspects of hepatotropic virus infections have been investigated, including occult hepatitis B in patients with liver dysfunction and postvaccinal immunity to HBV in healthcare workers. A relatively higher frequency of HBsAg and anti -HCV was found in patients with non-Hodgkin's lymphomas. The dominant variant of HCV genotypes, namely genotype 1b, was found in patients with chronic liver diseases in Northeastern Bulgaria.

The epidemiology and dynamics of COVID-19 in the first two years of the pandemic are analyzed. The most common symptoms related to the need for diagnostic clarification of HIV infection and the most common co-infections in patients with HIV were studied.

### **Publishing activity**

The publication output of Chief Assistant. Dr. Zhivka Stoykova Demireva-Kalcheva dm includes a total of 37 articles published in international and national periodical scientific journals, 9 of which were published before the defense of the educational and scientific degree "doctor". In 12 of the mentioned publications, she is the first author. 30 of the articles were

published in Bulgarian scientific journals and 7 in international journals. The total impact factor of the journals at the date of publication is 14.609 and after 2018 is 13.619. Chief Assistant Dr. Zhivka Stoykova Demireva-Kalcheva dm, participated with reports or posters in 28 scientific forums, 5 of them international and 23 national or national with international participation.

### **Quotations**

The scientific contribution of the candidate is also confirmed by the number of citations. According to data from the National Center for Information and Documentation (NACID), the Medical Library at the Medical University of Sofia and international databases ISI Web of Knowledge SM, ScopusTM and Google Scholar, 64 citations of the candidate's publications were found and the author has an h-index of 5.

### **Participation in scientific projects**

The candidate Chief Assistant Zivka Stoykova Demireva-Kalcheva PhD, for the announced position by competition at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna participated in 4 scientific projects. She is the head of two of the projects, three of the projects are from the "Science" Fund, Medical University-Varna, and one is from the Bulgarian Medical Union. The topics of the projects are:

- " Seroepidemiological and molecular genetic studies of cytomegalovirus infection in risk groups." Congenital cytomegalovirus infection.
- Seroepidemiological and laboratory-diagnostic studies on the prevalence and clinical significance of EBV infection.
- Study and analysis of HDV genotypes circulating in northeastern Bulgaria.
- Primary, post- erythremic, post- thrombocytopenic myelofibrosis - the involvement of inflammatory cytokines ( interleukin 6 (IL-6), interleukin 8 (IL-8)) and regulators of iron metabolism ( hepcidin ) in the pathogenesis of the anemic syndrome.

### **Evaluation of the teaching activity of the candidate**

Chief Assistant Dr. Zivka Stoykova Demireva-Kalcheva MD, more than 15 years of teaching experience in academic disciplines:

- Microbiology - Medicine/AEO and BEO - lectures and exercises;
- Microbiology - Dentistry/AEO and BEO - exercises;
- Microbiology - Pharmacy/BEO - exercises.

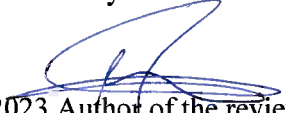
For the last 5 years from 2017 - 2022, her study load averaged 295 hours, with a total number of hours for 1475 hours.

### **Conclusion**

Chief Assistant Dr. Zivka Stoykova Demireva-Kalcheva MD, is a very well-trained scientist with extensive experience in the field of medical virology. As an employee of the Laboratory

of Virology at MU-Varna, MF, Department of "Microbiology and Virology", she successfully copes with the tasks assigned to her. He knows a wide range of laboratory methods for the diagnosis and analysis of viral pathogens. Her scientific and publication activity is significant, her articles have been published in refereed scientific journals, which have been evaluated by a large number of citations. She has experience in the development and management of scientific projects and is engaged in teaching activities.

My impressions of the professional and personal qualities of Chief Assistant Dr. Zivka Stoykova Demireva-Kalcheva MD, are excellent. She is a highly qualified virologist with significant scientific contributions in the field of the announced competition. In connection with the presented facts regarding the research achievements, teaching and management experience and my conviction of the excellent qualities of the candidate, I propose to the members of the esteemed jury to choose Chief Assistant Dr. Zivka Stoykova Demireva-Kalcheva PhD, for Associate Professor in the scientific specialty Virology for the needs of the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna.

  
Date 02 May 2023 Author of the review:  
(Assoc. Ivailo Alexiev Ivanov)