To the members of the scientific jury
Defined by Order No. P-109-276/ 25.05.2023
of the Rector of MU-Varna

R E V I E W

Of Prof. Dr. Iva Stefanova Christova, MD, Ph.D., D.Sc.
National Center of Infectious and Parasitic Diseases

Competition
Academic position "ASSOCIATED PROFESSOR"
Area 4.3. Natural sciences, mathematics and informatics
Specialty "Virology"

For the needs of Department "Microbiology and virology"
Faculty of Medicine, Medical University – Varna

announced in State Newspaper No. 28/ 28.03.2023

with a single candidate
DENITSA TODOROVA TSANEVA-DAMYANOVA, MD, PhD

I declare that have no conflict of interest and no joint publications with Dr. Tsaneva.

CAREER DEVELOPMENT

Dr. Tsaneva's career development has been successful and upward. She graduated from a science and mathematics high school with a biology profile and at the same time passed certification exams to graduate from a language high school with the study of English. The acquired knowledge and skills will be extremely useful to her after she graduates medicine in 2007 at MU-Varna and focuses on virology. In the period 2008-2011, she specialized in virology as a clinical resident. Since 2012, she has been working in a private

laboratory as a doctor - virologist, and since 2016, she has been an assistant and full-time doctoral student in the Department of Microbiology and Virology of the University of Varna. In 2019, she successfully defended her dissertation and was awarded the title of "Doctor" with her research on the prevalence of viral hepatitis B and D in the general population and in patients with chronic liver diseases in North-eastern Bulgaria. Since 2019, she is currently a chief assistant in the Department of "Microbiology and Virology" at Medical University of Varna.

SCIENTIFIC RESEARCH ACTIVITY

In the competition, Dr. Tsaneva presents a total of 43 scientific papers, distributed as follows:

- Abstract of a dissertation for the scientific and educational degree "Doctor" -1
- Monograph - 1
- A chapter of a book published abroad - 1
- Chapters in textbooks – 3
- 23 scientific articles, of which: publications in journals with SJR – 15 and publications in journals without SJR – 8
- scientific papers presented at national and international scientific forums - 14

An impressive list of attended webinars is also presented, which I take as evidence of increased scientific interest of Dr. Tsaneva and acquisition of new knowledge in the field of virology.

The dissertation work developed by Dr. Tsaneva, under the supervision of Associate Professor Lilia Ivanova, for awarding the educational and scientific degree "Doctor" is on the distribution, diagnosis and vaccine prevention of hepatitis B and D in North-eastern Bulgaria. Thanks to Dr. Tsaneva's in-depth scientific research, the dissertation represents a serious contribution to public health.

Dr. Tsaneva solely is the author of the monograph "Hepatitis D virus (HDV) - a satellite in the orbit of the chronic hepatitis B virus", result of 5 years of tireless and very productive work. It presents literature data and her own experience in studies on the etiology, diagnosis, distribution and specific prevention of hepatitis D virus infection. Great social importance of this disease is well-known due to the serious and irreversible liver damage it causes. I highly appreciate genotyping carried out to clarify the genotype 1 of the HDV virus

circulating in the country. The monograph is very useful for a wide range of medical professionals.

It should be noted that Dr. Tsaneva is the first author of publications in two prestigious journals - Biotechnology & Biotechnological Equipment and Folia Medica - respectively with studies on the sero-epidemiology of SARS-CoV-2 and on the immune response against the hepatitis B virus in vaccinated persons in North-Eastern Bulgaria. With her participation, publications were realized in leading journals such as Acta Microbiologica Bulgarica and Journal of IMAB.

Dr. Tsaneva's works are highly valued by the scientific community, as evidenced by their citations in authoritative scientific publications (a total of 26 times according to the provided academic reference), including World Journal of Gastroenterology, PLoS One, Viruses, Journal of Medical Virology, Pathogens, Annals of Cancer Research and Therapy, Journal of Hematology and Clinical Research and others.

Dr. Tsaneva worked actively as a participant in 4 research projects, 3 of which were evaluated and financed by the "Science" Fund of MU-Varna:

• 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

• Research and analysis of HDV genotypes circulating in North-eastern Bulgaria;

and one project was financed under the National Program "Young scientists and postdoctoral fellows" of the Ministry of Education and Culture:

• HDV genotypic profile in Bulgaria – laboratory and clinical manifestations.

In summary, the chief assistant Dr. Tsaneva is an inquisitive, theoretically and practically prepared scientist who is actively involved in research and scientific projects, she knows how to analyse and discuss the obtained results and finalise them by realization of publications, appreciated by the scientific community around the world.

MAIN SCIENTIFIC DIRECTIONS

The main directions in Dr. Tsaneva's research activity concern are:

- hepatitis viruses – HBV, HDV, HCV

- herpes viruses – EBV, CMV
- viral infections in transplanted and immunocompromised persons
- SARS-CoV-2 (COVID-19).

MAJOR SCIENTIFIC CONTRIBUDIONS

A serious scientific contribution is the conducted targeted systematic studies on hepatitis D infection, most of which are pioneering for our country. For the first time in Bulgaria, the experience of sequencing and genotyping of the hepatitis D virus genotypes circulating in the country has been shared. A detailed description of the existing regulations regarding the prevention and control of chronic viral hepatitis D has been made. A survey was conducted among patients with chronic hepatitis D, and their awareness regarding the disease was recorded.

In a large sero-epidemiological study on the frequency of HBsAg and anti-HCV positivity in patients with non-Hodgkin's lymphomas, a higher frequency than the average for North-eastern Bulgaria and the country was found, with HBV markers being more common in this group of patients, compared to HCV. Reactivation of HBV and HCV viruses in immunocompromised individuals has been found to be defined by a sharp increase in HBV and HCV replication. Clinical presentation of reactivation is variable, ranging from an asymptomatic course to severe hepatitis, liver failure, and death. Approximately 20% to 30% of chronically HCV-infected individuals develop cirrhosis over a period of 20-30 years.

A seroepidemiological study was conducted to determine the duration of postvaccinal immunity after hepatitis B vaccination in people aged 6 months to 20 years covered by the mandatory hepatitis B vaccination program.

A contribution is a seroepidemiological and laboratory-diagnostic study on the prevalence and clinical significance of Epstein-Barr virus (EBV) infection among the population in North-Eastern Bulgaria for a 5-year period (2010-2015).

Results of laboratory evaluation of the applied serological tests, based on the EBV nuclear antigen as an extremely useful marker for distinguishing between primary and past infections in anti-VCA IgM(+)/anti-VCA IgG (+) patients, are essential. Significance of an anti-VCA IgG avidity test in patients with infectious mononucleosis and suspected EBV reactivation was investigated

Evaluation of EBV serostatus of women of reproductive age in Varna (2010-2016) to determine the risk of intrauterine and early postnatal EBV infection is also of a contributing nature.

Risk of developing lymphoproliferative diseases in immunosuppressed patients was investigated by examining anti-EA (D) IgG, as a possible marker of viral reactivation.

A contribution is country's pioneering application of the Real time PCR method in the diagnosis of EBV in patients with primary infection and with reactivation of the infection in patients with Hodgkin's disease, non-Hodgkin's lymphomas and other immunosuppressed patients, as well as comparative evaluation of Real time PCR method and serological methods.

Formulated criteria for improving EBV diagnosis and establishing viral reactivation in potentially at-risk patients are very useful.

A contribution to the country are the results of the large sero-epidemiological study conducted to specify seroprevalence of CMV in the general population in North-Eastern Bulgaria and the frequency of primary infection depending on age.

With regard to HIV infection, results of conducted study on the most common symptoms leading to the need for diagnostic clarification of HIV seropositivity, as well as the analysis of the most common co-infections in patients living with HIV, are of a contributing nature.

Screening studies on seroconversion in the general population are essential to elucidate the spread of the SARS-CoV-2 virus and formation of herd immunity. This is the contribution of a large-scale hospital-based sero-epidemiological study on the prevalence of antibodies against SARS-CoV-2 among 586 outpatients during the first two years of the pandemic.

TEACHING ACTIVITY

Academic reference for over 8 years of teaching experience of Dr. Tsaneva - from 2015 to 2019 as an assistant, and from 2019 to the present as a senior assistant, is attached. With a 220-hour annual standard according to the decision of the AC of MU-Varna, Dr. Tsaneva realizes from 240 hours to 340 hours a year, the main part of which are exercises

with English-speaking students. In recent years, she also led part of the virology lecture course for medical students, both in Bulgarian and in English.

CONCLUSION

Dr. Denitsa Tsaneva is a young, successful and very promising scientist. The scientific contributions of her works and the high scientometric indicators give her a worthy place among the leading researchers of viral infections in Bulgaria.

Summarizing the results of her research activity, the scientific contributions of her multi-faceted scientific developments, highly appreciated by the scientific community, and taking into account her teaching skills, I can confidently state that they fully satisfy the quantitative and qualitative criteria of Low for development of the academic staff of R. Bulgaria for holding the academic position "Associate Professor", the Regulations for its application and the Regulations for the terms and conditions for acquiring scientific degrees and holding academic positions at MU-Varna.

Based on all this, I recommend to the respected members of the scientific jury to support the candidacy and to propose to the Faculty/Academic Council of MU-Varna **chief assistant Dr. Denitsa Todorova Tsaneva - Damyanova, PhD** to be elected to the academic position of "ASSOCINATE PROFESSOR" in the specialty "VIRUSOLOGY", for the needs of the Department of Microbiology and Virology. Faculty of Medicine, MU-Varna.

Sofia city

Signature:

/ Prof. Iva Christova, MD, PhD, DSc/