

To the members of the Scientific Jury,
determined by order No. PD-38-
550/19.09.2023
of Prof. Dr. Atanas Gerdzhikov
Rector
SU "St. Kliment Ohridski"

OPINION

Associate Professor Ivaylo Alexiev Ivanov,
head of the National Reference Confirmatory Laboratory of HIV
National Center of Infectious and Parasitic Diseases, Sofia, Bulgaria

for an announced competition for the occupation of an academic position "ASSISTANT PROFESSOR" in professional direction 4.3. Biological sciences (Virusology - molecular virology), announced in SG no. 65 of 28.07.2023

Dear members of the scientific jury,

The Management of SU "St. Kliment Ohridski" announced a competition and Chief Assistant Kalina August Shishkova PhD submitted the required documents. The candidate's submission met the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria and the Regulations for the Development of Academic Staff at SU "St. Kliment Ohridski".

Biographical data of the candidate

Education and academic development

- Ch. assistant Kalina August Shishkova PhD, graduated from high school at 29 ESPU "G. Bakalov", Sofia.
- In 1997, she obtained a Master's degree in "Molecular Biology" from the Faculty of Biology at Sofia University "St. Kliment Ohridski".
- In 2014, she defended her doctoral thesis on the "Distribution and genetic diversity of Torque teno viruses (family Anelloviridae) in Bulgaria" at Sofia University "St. Kliment Ohridski".

Professional and academic development

- From 2011 - until now she has been Ch. assistant - Sofia University "St. Kliment Ohridski", Faculty of Biology, Laboratory "Virusology".

- From 2010 - 2011 she has been Senior Assistant - Sofia University "St. Kliment Ohridski", Faculty of Biology.
- From 2004 to 2010 she has been Assistant - Sofia University "St. Kliment Ohridski", Faculty of Biology.
- From 2002 - 2004 she has been Honorary Assistant - Sofia University "St. Kliment Ohridski", Faculty of Biology.
- From 1997 - 2002 she has been Specialist Virologist - Institute of Microbiology, BAS.

At the time of application for the current competition for associate professor, the candidate Ch. assistant Kalina Shishkova, has more than 26 years of work experience in the specialty.

Evaluation of the candidate's scientific activity and contributions.

In the scientific activity of Ch. assistant Kalina Shishkova, several main directions in the field of experimental and medical virology stand out and can be divided thematically into four main directions: I. screening of natural products for antiviral activity; II. research of new synthetic compounds for the presence of an antiviral effect; III. medical virology, and IV. study of the antiherpetic effect of physical factors.

The first direction is related to the modern therapy of herpes viruses and the emergence of drug-resistant viral strains. A large number of extracts obtained by different methods, as well as their fractions and active substances isolated from lower and higher plants, invertebrates and microorganisms, were studied for the presence of inhibitory and inactivating activity. One of the significant contributions is the establishment of the antiviral activity of extracts obtained from Bulgarian medicinal plants, as well as the antiviral effect of hemocyanins, isolated from the Black Sea rapan in collaboration with an international team of researchers. The final goal of the studies was to identify the potential opportunities for the development of anti-herpes substances and their application.

The second direction in the contributions of Ch. assistant Kalina Shishkova, is the synthesis of new antiviral substances based on the knowledge of the structure and functions of antivirals used for treatment. This includes studies on the biological activity of thiazole hydroxycinnamic acid amides and others on the in vitro replication of influenza A (H3N2) virus and acyclovir esters on the replication of HSV-1 and HSV-2. Last but not least is the study conducted with the human coronavirus 229E (HCoV-229E) to evaluate the in vitro efficacy of some analogs of ion channel inhibitors.

A significant contribution in the third direction is the identification for the first time in the country of Torque Teno viruses by adapting different primer systems. The virus has been found in samples from blood donors, as well as in patients with various diseases, including viral hepatitis, tumors, respiratory and kidney diseases, transplant patients and patients of unknown etiology of the disease. Sequencing and phylogenetic analysis were performed, which showed that most of the Bulgarian isolates were closely related and clustered with the genotype 1 reference sequences.

The fourth direction in the contributions of Ch. assistant Kalina Shishkova, is the effect of surface-wave gas-discharge plasma-treated nutrient medium and distilled water on VHC1 virions.

Publication activity and citations

The publishing activity of Kalina Shishkova includes a total of 33 articles published in international and national scientific journals, 3 of which were published before the competition for the academic position of "associate professor". 30 of the publications are related to the "associate professor" competition, 21 of them are articles with IF or SJR-factor and 4 without IF or SJR-factor. The total IF of Ch. assistant Kalina Shishkova, for the competition is 32,885.

Kalina Shishkova has participated with reports or posters in 48 scientific forums in the country and abroad.

The scientific contribution of the candidate is also confirmed by the number of citations, 16 of the articles with her participation have 138 citations.

Minimum required points by groups of indicators of Ch. assistant Kalina Shishkova, meets the requirements of the rules of the Sofia University "St. Kliment Ohridski".

Participation in scientific projects and guidance of master's degree thesis

The candidate Ch. assistant Kalina Shishkova, has participated in 20 scientific projects from the Ministry of Education, Culture, Sports and Science and the Sofia University "St. Kliment Ohridski". She is the scientific supervisor of 9 successfully defended master's degree thesis in virology.

Teaching activity

Ch. assistant Kalina Shishkova has a long-term teaching experience in virology at the Virology Laboratory, Faculty of Biology, Sofia University "St. Kliment Ohridski". For the last 5 years from 2017 - 2022, her average horarium is 636.3 hours, with a total number of hours of 3181.5 hours.

Conclusion

Ch. assistant Kalina Shishkova PhD, is a very well-trained scientist with extensive experience in the field of virology. As an employee of the Virology Laboratory, Faculty of Biology of the Sofia University "St. Kliment Ohridski", she successfully copes with the tasks assigned to her. She has a wide palette of theoretical knowledge and laboratory methods for diagnosing and analyzing viruses. Her scientific and publication activity is significant, her articles have been published in refereed scientific journals and have been evaluated by a large number of citations.

She has experience in developing and managing scientific projects and is engaged in teaching activities.

My impressions of the professional and personal qualities of Ch. assistant Kalina Shishkova PhD, are excellent. She is a highly qualified scientist with significant scientific contributions in the field of the announced competition. In connection with the presented facts regarding significant research achievements, teaching and management experience, and my conviction of the candidate's excellent qualities, I propose to the members of the esteemed jury to select Ch. assistant Kalina Shishkova PhD, for Associate Professor in the scientific specialty Virology for the needs of the Sofia University "St. Kliment Ohridski".

 Recoverable Signature

X Ivailo Alexiev

Signed by: Ivaylo Aleksiev Ivanov

Date 02.11.2023 Author of the review:
(Associate Professor Ivaylo Alexiev Ivanov)