

БЪЛГАРСКА АКАДЕМИЯ НА НАУКИТЕ
ИНСТИТУТ ПО МИКРОБИОЛОГИЯ

СТЕФАН АНГЕЛОВ
№ 1158/08 12 2022 г.
СОФИЯ

To Assoc. Prof. Ekaterina Krumova -
Chairman of the Scientific Jury,
determined by Order I-134/27.09.2022
of Prof. Penka Petrova DSc,
Director of the Institute of Microbiology
„Stefan Angelov" – Bulgarian Academy of Sciences
„Acad. Georgi Bonchev" str, bl. 26, Sofia 1113

Attached I submit: A review

for the competition for the occupation of the academic position "Associate Professor "
in professional direction 4.3 Biological sciences (Virology),
published in „Durjaven Vestnik“, issue 60 / 29.07.2022 for the needs of the Department of
Virology, Laboratory "DNA viruses and oncolytic viruses"

Reviewer: Prof. Neli Stoyanova Korsun, MD, DSc

Specialty: Virology

Institution: National Centre for Infectious and Parasitic Diseases, Sofia

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The review was compiled in accordance with the requirements of the Law for the development of the academic staff in the Republic of Bulgaria (LDASRB) and Section III / Section IV of the Rules of LDASRB - Terms and Conditions for Occupation of Academic Position "Associate Professor"

I declare that I have no joint publications or participation in scientific forums and projects with the candidate.

I. Career development

Neli Vilhelmova-Ilieva was born in 1978. During the period 1998-2002, she was a student at the Faculty of Biology of Sofia University "St. Kliment Ohridski", where she received a bachelor's degree in biology, molecular biology. In 2004, she obtained a master's degree in molecular biology and virology at the same faculty. From March 2009 to June 2011, she worked as a specialist virologist in the "Virology" Department at the "Stefan Angelov" Institute of Microbiology- BAS, where she carried out fundamental and scientific-applied research in the field of microbiology, virology, and immunology. In 2012, she defended her doctoral dissertation in the scientific specialty 01. 06. 13. Virology on the topic "Combined effect of ellagitannins and acyclovir on the replication of herpes simplex viruses." From June 2011 to April 2017, she was an assistant, and from 01.05.2017, she is currently a main assistant at the same institute. Since the beginning of 2017, she has been the head of the "DNA viruses and oncolytic viruses" laboratory. She speaks French and Russian at the A1 level and English at the B2 level. In 2011, she received the "Prof. Dr. Stefan Angelov" award for the best work of a young microbiologist.

II. Materials received

I received all the materials for the competition by e-mail. The candidate Assistant Professor Neli Vilhelmova-Ilieva has presented evidence of compliance with the minimum national requirements for holding the academic position "Associate Professor", as well as with the additional requirements of the Institute of Microbiology- BAS, information about the research work and the main contributions to it, lists of participation in scientific forums and projects, study load report, resume, abstract, etc.

III. General characteristics of the activity

Scientific production and publication activity

For participation in the current competition assistant professor, N. Vilhelmova-Ilieva presents a total of 18 full-text publications in scientific journals, referenced and indexed in world-famous databases with scientific information (Scopus and Web of Science). 4 chapters of collective monographs, and one participation in an international congress, published in full text. A total of seven publications are in Q1 issues, three in Q2 issues, three in Q3 issues, and three in Q4 issues. My check showed that the Biomedicine (Taipei) edition (ISSN: 2211-8039) has Q3 in 2021 and not Q1 as is indicated in the applicant's documents. The publication in the proceedings of the Second Congress of Virology (Days of virology in Bulgaria), 2008 is present in the abstract for the acquisition of the educational and scientific degree "Doctor" and is not reviewed in the current competition. Of all the publications presented, 10 are in journals with an impact factor and the total impact factor is 36.295. In the listed publications and chapters of collective monographs Assistant Professor N. Vilhelmova-Ilieva is the first author in 10 (43.5%), second

author - in 2 (8.7%), and next author - in 11 (47.8%) publications, which speaks of her leading role in a significant part of scientific research. All publications submitted for the competition (except one) do not repeat those submitted for the acquisition of the educational and scientific degree "doctor". She has participated in 32 scientific forums, 10 of which were abroad.

The candidate presents 120 citations, of which 3 citations are given twice in the list (No72 = No84; No107 = No108 и No111 = No112). A total of 101 citations are in journals, referenced, and indexed in world-renowned databases with scientific information (Scopus and Web of Science). The remaining 16 citations include 3 - in dissertations, 2 - in projects, 1 - in a book chapter, and 10 - in non-referenced Scopus and Web of Science publications. The H-index of Assistant Professor N. Vilhelmova-Ilieva in Scopus is 7. The citations in the world databases show the importance of the scientific topics developed by the candidate and the recognition of the international academic community.

Assistant Professor N. Vilhelmova-Ilieva has participated in 4 current research projects financed by the "Scientific Research" Fund at the Ministry of Education and Science: two projects from 2019, one from 2020, and one from 2021. She has prepared 6 reviews in scientific publications, referenced and indexed in Web of Science /Scopus, and 3 reviews in other international academic publications.

IV. Compliance of the applicant with the minimum national requirements contained in the Regulations for the implementation of the LDASRB - Section III. Conditions and procedure for occupying the academic position "Associate Professor" (amended and supplemented, SG No. 15 of 19.02.2019; Field 4. Natural sciences, mathematics, and informatics; Professional direction 4.3. Biological sciences) and in the Regulations for the conditions and the procedure for obtaining scientific degrees and for holding academic positions at the "Stefan Angelov" Institute of Microbiology at the BAS.

Table 1. Number of points by indicators

A group of metrics	Indicators	Number of points		Number of points based on the evidence presented
		Regulations for the implementation of the LDASRB	Regulations of the Institute of Microbiology - BAS	
A	1. Dissertation work for the educational and scientific degree "Doctor"	50	50	50
B	4. Habilitation work - scientific publications in journals that are referenced and indexed in world-famous databases with scientific information (Web of Science and Scopus)	25 for publ. in Q1 20 for publ. in Q2 15 for publ. in Q3 12 for publ. in Q4 10 for publ. in edition with SJR without IF	Q1 – 25 points Q2 – 20 points Q3 – 15 points Q4 – 12 points edition with SJR without IF - 10 points	100 (4 x 25)

Г	7. Scientific publication in journals that are referenced and indexed in world-renowned databases of scientific information (Web of Science and Scopus), outside the habilitation work	25 for publ. in Q1 20 for publ. in Q2 15 for publ. in Q3 12 for publ. in Q4 10 for publ. in edition with SJR without IF	Q1 – 25 points Q2 – 20 points Q3 – 15 points Q4 – 12 points edition with SJR without IF - 10 points	75 (3 x 25) 60 (3 x 20) 45 (3 x 15) 36 (3 x 12)
	8. Published chapter in a book or collective monograph	15	15	60 (4 x 15)
Д	11. Citations in scientific publications, monographs, collective volumes, and patents, referenced and indexed in world-renowned databases of scientific information (Web of Science and Scopus)	2	2	202 (101 x 2)
Е	14. Participation in a national scientific or educational project	10	20	80 (4 x 20)
	Total points			708

Table 2. Minimum required points by groups of indicators for occupying the academic position "Associate Professor" and number of points based on presented evidence

A group of metrics	Content	Minimum points required		Number of points based on the evidence presented
		Regulations for the implementation of the LDASRB	Regulations of the Institute of Microbiology-BAS	
A	Indicator 1	50	50	50
B	Indicators 3 or 4	100	100	100
Г	Sum of indicators from 5 to 10	200	220	276
Д	Sum of points in indicator 11	50	60	202
Е	Sum of the indicators from 12 to the end	-	-	80
	Total points	400	430	708

It is clear from the tables presented above that the presented evidence for the separate groups of requirements from the two Regulations significantly exceeds the required number of points.

Main directions in scientific activity

The scientific production of Assistant Professor N. Vilhelmova-Ilieva is directed to the study of the antiviral activity against herpes simplex viruses (HSV) of several synthetic and natural

products. The candidate's scientific contributions are presented in detail in the academic report. Of these, I will highlight the original and scientifically applied contributions:

Original scientific contributions of Assistant Professor N. Vilhelmova-Ilieva:

1. Determination of the anti-herpes viral activity of tannins (ellagitannins and halotannins) against susceptible and resistant ACV - HSV-1 and HSV-2 strains. Demonstration of the synergistic action of the most active agents administered simultaneously with ACV.
2. Determination of the influence of Canadian propolis extract on the replication and viability of extracellular HSV-1 virions.
3. Determination of the antiherpetic activity of rose essential oils and their products in relation to HSV-1 replication and extracellular virion viability. Determining their influence on the stage of adsorption of the virus to the host cell and the protective effect they have on healthy cells. Evidence of their synergistic action administered with ACV.
4. Determination of the antiviral activity of post-metabolites isolated from different lactic acid bacterial strains (used in the production of different dairy products). Comparison of their influence on the replicative cycle and viability of extracellular virions of fish (KHV) and human (HSV-1) herpes viruses. Determination of their influence on the stage of attachment of the virus to susceptible cells and the protective effect of post-metabolites on healthy cells, before the onset of herpes infection.

Contributions with applied meaning:

1. Determination of the influence on the replicative cycle and vitality of the extracellular virions of HSV-1 and human coronavirus (HCoV-43) of extracts from Bulgarian medicinal plants. It was also determined which of the extracts influence the adsorption stage of the viruses to the cells and whether they protect the cell from subsequent viral infection. The extracts are an integral part of the products of the companies "Mirta Medicus" and "Extract pharma", which are sold in the commercial network.
2. Determination of the virucidal activity of "LumiSept" - disinfecting gel and lotion according to BDS EN14476:2013+A2. 3. Determination of the virucidal activity of air disinfection systems of the company "Astra 96".

Learning and teaching activity

Assistant Professor N. Vilhelmova-Ilieva presents a study load report for the academic year 2021/2022 as a guest lecturer in the Department of Health Care at the Faculty of Public Health, Health Care and Sports of Southwestern University in Blagoevgrad in the amount of 25 hours of lectures and 5 hours of exercises for the first-year students in the specialties "nurses" and "midwives". As a future associate professor, it is recommended that the candidate continue and expand her teaching activities.