

To the honorable members of the Scientific Jury  
Designated by Order No. 134/29.05.2020  
of the Director of the National Center  
of Infectious and Parasitic Diseases  
Prof. Todor Kantardjiev, MD, DSc

## REVIEW

**From Prof. MARIANA STOYCHEVA VERTIGOVA, MD, DSc**

Regarding a competition for the academic position "PROFESSOR" in the field of higher education: 7. "Healthcare and Sports", by professional field 7.1. "Medicine" and scientific specialty "Parasitology and Helminthology"

For the needs of the Department of Parasitology and Tropical Medicine (DPTM), NCIPD, Sofia, published in the State Gazette 24/17.03.2020,

With a single candidate: Assoc. Prof. Dr. Iskra Georgieva Raynova, MD, DSc,  
Deputy Director of NCIPD, Sofia, Chief Coordinator of the expert council for Medical Parasitology at the Ministry of Health

### **I Analysis of the candidate's career profile**

Assoc. Prof. Dr. Iskra Raynova, MD is a graduate of MU Sofia, with a master's degree in medicine (Diploma № 003059 / 29.11.1982). Assoc. Prof. Dr. Iskra G. Raynova began her professional career as a district pediatrician in the town Dupnitsa (1982-1985), resident therapist at the IV City Hospital, Sofia (1985 -1987) and in 1987 entered to work in NCIPD as a physician in the DPTM. After a competition she was appointed as a research associate in the Laboratory for Experimental and Applied Parasitology (1991-1994). She has two specialties: Medical Parasitology (Diploma № 40088 / 01.06.1992) and Immunology (Series, AC № 001957 / 01.06.1996).

#### **Scientific degrees:**

**PhD** in 2006 with successful defense of the dissertation on the topic "*Development and characterization of ELISA and Western blot with excretory-secretory antigens from Toxocara canis for diagnosis and study of the distribution of toxocarosis in Bulgaria*" (Higher attestation commission (HAC), Certificate № 30894/22.12.2006).

**DOCTOR OF SCIENCES** with successful defense of the dissertation "*Helminthozoonoses (trichinellosis, toxocarosis and echinococcosis) in humans. Epidemiological indicators, distribution, diagnosis and treatment*" - NCIPD, diploma No. 53/07.02.2020

#### **Scientific positions:**

Research fellow III-I grade in the laboratory "Experimental and Applied Parasitology", Department of "Parasitology and Tropical Medicine", NCIPD, 1991-1994.

Senior Research Associate Second Degree/Associate Professor in Parasitology and Helminthology (Higher Attestation Commission, Certificate No. 26312/07.06.2010).

#### **Administrative positions:**

Head of the Laboratory "Experimental and Applied Parasitology" (1994-2011).

Head of DPTM (2011-2016)

Deputy Director of NCIPD since 2016

Assoc. Prof. I. Raynova, DSc has a specialization abroad - Institute of Parasitology, Bern - Switzerland (2002).

The main directions of its activity include research, laboratory-diagnosis, teaching, administrative work, organizational-methodical and control functions to the parasitological units of RHI and MU.

Assoc. Prof. I. Raynova, DSc, is a member of the Bulgarian Medical Association, the Bulgarian Parasitological Society and the Bulgarian Association of Medical Parasitologists.

## **II. General description of the submitted materials in the competition**

Assoc. Prof. Dr. I. Raynova, DSc, presented on electronic means the required documentation in full: administrative part - application, CV, diplomas, certificates; data on teaching and research activities - list of publications with evidence, reference for contributions and citations.

I would like to note that the documents are presented correctly and precisely, which allows and facilitates the assessment of the mandatory quantitative and qualitative criteria and scientometric indicators.

## **III. Evaluation of the candidate's scientific works for the overall academic development**

### **(1) General characteristics of the scientific production and publication activity**

The complete list of scientific publications and collections of Assoc. Prof. Raynova includes 99 titles and 154 participations in congresses and conferences.

According to the requirements of the "Law for scientific development in Bulgaria" in the competition for the academic position "Professor" Assoc. prof. Dr. I. Raynova participated with 56 published scientific papers (12 in foreign publications and 44 in national journals and collections) and 119 scientific papers presented at scientific forums (international 5 and national 114), as all of them are after acquiring the academic title ASSOCIATE PROFESSOR (2010) (author's reference № 10). In addition, abstracts of the defended dissertations and participation in the preparation of two monographs in 2012 and 2016 are presented.

**The scientific papers are distributed as follows:**

#### ***Abstracts***

1. Raynova, I. "*Development and characterization of ELISA and Western blot with excretory-secretory antigens from Toxocara canis for diagnosis and study the distribution of toxocarosis in Bulgaria*" Abstract of the dissertation for PhD degree. Scientific supervisor: Prof. Petrov, Assoc. Prof. Kurdova, 2006,

2. Raynova, I. „*Helmintozoonoses (trichinosis, toxocariasis and echinococcosis) in humans. Epidemiological indicators, prevalence, diagnosis and treatment*”. Author's abstract of a dissertation for the "Doctor of science", 2020.

#### ***Monographs*** - 2 issues.

(1) *Zoonoses in humans and animals*, (edited by St. Martinov and R. Komitova). Medicine and Physical Education, 2012

(2) Petrov P., R. Kurdova-Mincheva, V. Boeva-Bangoozova, I. Angelov, D. Vuchev, Ts. Doichinova, Z. Ivanova, D. Yordanova, T. Kantardzhiev, I. Kaftandzhiev, A. Kuzmanov ,

I. Raynova, R. Harizanov, N. Tsvetkova, B. Chakarova. *Clinical parasitology and tropical medicine*. Sofia, East-West, 2016.

Assoc. Prof. I. Raynova participated in the monographs by developing 20 nosological units.

(2) Publication activity - dissemination and application of the scientific and practical achievements of the candidate among the scientific community;

Assoc. Prof. Dr. I Raynova, MD publishes his works in local and foreign specialized scientific journals: *Infectology*; *Science, Infectious Diseases, Parasitology*; *Problems of Infectious and Parasitic Diseases*, *Comptes rendus de l'Academie bulgare des Sciences*, *Eur J Clin Microbiol Infect Dis*; *Acta Zoologica Bulgarica*; *Journal of Infection and Public Health*; *Euro Surveill*, *Helminthologia*, *Parasitology Research*, *Am J Trop Med Hyg*; *Informational Journal of NCIPD*, *Medinfo* and others. Thus, she presents to the general scientific community the directions of her scientific research and the achieved results.

Assoc. Prof. Raynova has presented 44 full-text publications in magazines and collections in Bulgaria, being the first author in 14/44, the second author in 19/44 and the third or subsequent author in the others.

Full-text publications in magazines and anthologies abroad - 12, as in 4/12 Assoc. Prof. I Raynova is the first, leading author, in 5/12 is the second author and third or subsequent in the others.

13 of the publications are in journals with IF (author's reference №16) and the total IF is 22 685.

#### **Evaluation of scientific production and scientific contributions:**

The scientific production of Assoc. Prof. I Raynova presented in the competition can be generally commented in the following areas:

**1. Immunodiagnosis of parasitoozoonoses in humans.** Impressive in volume, detailed and precise implementation of long-term, complex experimental studies and achievements in the laboratory immunodiagnostics of toxocariasis, trichinellosis, echinococcosis and toxoplasmosis. ELISA-based serological reactions have been developed for specific IgG Ab, avidity and Western blot. A technological set for serodiagnosis of toxocariasis has been developed. Assoc. Prof. Raynova participated in the development of PCR in leishmaniasis, trichinellosis and echinococcosis. The contributions in the clinical diagnostics, DD, determination of the clinical stage /acute, chronic, latent/, contributing to adequate therapeutic behavior, are significant.

In DPTM, as a Head of Laboratory and Head of the Department she participates in the implementation of complex clinical and epidemiological studies on the prevalence of parasitoses in our country - Communicable parasitic diseases, soil transmitted helminthiases, parasitoozoonoses, opportunistic and imported parasitoses. Assoc. prof. Raynova conducts targeted sero-epidemiological research in certain contingents for the spread of toxocariasis and contributes to clarifying the the state of parasitoses among the population.

A diagnostic algorithm for the routine practice has been developed. The dynamics of persistent trichinellosis in our country is analyzed annually - as epidemic outbreaks and sporadic cases and the approximate economic losses in healthcare are calculated. In echinococcosis, the serological diagnosis is improved, its correlation with the ultrasound

stages is analyzed, and the epidemiological dynamics/tendency to reduce the morbidity is monitored periodically.

She participates in the study of epidemiology, clinical diagnosis and treatment of communicable parasitic diseases / enterobiasis, giardiasis / - especially in kindergartens, also periodically in the analysis of soil transmitted parasitoses/ ascariasis and trichuriasis / and intestinal opportunistic invasion /cryptosporidiosis/. From intestinal helminthiases epidemiologically are studied cestodoses / disease of bovine tapeworm / and serodiagnostic - sporadic cases of cysticercosis. For opportunistic parasitosis - regarding toxoplasmosis, serodiagnosis has been improved to distinguish acute from latent infection, a method for cryopreservation of isolated *Toxoplasma* strains, blastocysts and trypanosomes has also been studied, and PCR diagnostics has been introduced for pneumocystosis. Data on the prevalence of visceral leishmaniasis was analyzed, with improved possibility for diagnosis by PCR and analysis of imported cutaneous leishmaniasis.

The annual clinical and epidemiological analyzes of the local and imported parasitic pathology, in which the author actively participates, as well as the measures for their surveillance and control in the country are of exceptional contribution to the realization of parasitological science and practice at national level.

### **(3) Participation in implementation and management of projects:**

Assoc. Prof. I Raynova, DSc is involved in:

#### **2 international projects:**

“Joint development and evaluation of new diagnostic tools to investigate the public health impact of zoonotic parasitic diseases and to provide new basis for the strategic control”. Partners: Institute of Parasitology in Bern and Department of Parasitology and Tropical Medicine, NCIPD, Sofia. № 7 IP 63584, duration 2000-2003 – 36 months

“Genotyping of *Echinococcus granulosus* strains from Bulgaria and cloning of T cell immunomodulatory protein” Partners: Institute of Parasitology in Bern and Department of Parasitology and Tropical Medicine, NCIPD, Sofia. Project Code 13.117, duration 01.07. 2014 – 30.06.2015.

#### **7 national projects funded by NSF:**

"Studies on the early diagnosis of acute pneumocystosis and toxoplasmosis in immunocompromised and immunocompetent patients" - contract L-433/1994

"Studies of opportunistic parasitosis in Bulgaria-etiological structure and clinical-diagnostic features" - contract L-1001/00 with NSF

"Development and evaluation of new methods for serological diagnosis of parasitic zoonoses in humans" - contract L-1514/05.

"Species-specific antigens from *Trichinella spiralis*. Isolation, purification, characterization and immuno-diagnostic evaluation” - contract L-515/95.

"Immunological, molecular biological and seroepidemiological studies in echinococcosis and toxocariasis - parasitozoonoses with great medical and social importance" - contract DTC 02/79.

"Molecular genetic studies on the prevalence of pneumocystosis in humans in Bulgaria" - contract KP-06-H33 / 18 of 21.12.2019

Deputy Head of the Project for creation of competence center BG05M20P001-1.002 "Fundamental, Translational and Clinical Investigations of Infections and Immunity" 2018-2023, funded by the Operational Program "Science and Education for Smart Growth"

**Assoc. Prof. Dr. I Raynova, DSc participates in 2 national research programs:**

1. National program for prevention and control of vector-transmitted infections among the population for the period 2014 - 2018.

2. National program for prevention and control of echinococcosis in humans and animals - 2004-2008.

(4) Management of doctoral students.

Assoc. Prof. Dr. Iskra G Raynova, DSc is the scientific supervisor of 5 doctoral students, 4 of whom successfully defended their PhD thesis and 3 graduates from the Faculty of Biology at Sofia University "St. Kliment Ohridski" (Reference № 19).

V. Reflection (citation) of the candidate's publications in the national and foreign literature (publication image). According to reference № 15 Assoc. Prof. I Raynova has 6 cited articles with 48 citations in Bulgarian and foreign magazines and collections. The common IF from citations is 22,428.

VI. Complex, qualitative assessment of the teaching activity, incl. scientific guidance of students, doctoral students, postgraduates.

Associate Professor I Raynova actively participates in the teaching activities of the Department of Parasitology and Tropical Medicine in the courses for postgraduate training, consulting, methodological and experimental-organizational activities of the enrolled graduates and postgraduates with lectures, exercises and seminars, according to the NCIPD program. The average workload in the last 5 years is 850 hours (Official Note NCIPD 92-00-409 / 10.04.2020).

I would like to mention the significant number of PhD defended under the guidance of Assoc Prof. I. Raynova, Dsc, which is a real school of specialists who will continue adjustment path in science.

VII. Critical remarks and recommendations: None.

VIII. General assessment of the candidate's compliance with the mandatory conditions and the mandatory quantitative criteria and scientometric indicators according to the Regulation for the development of the academic staff and holding academic positions according to the Rules of NCIPD-Sofia, Chapter V.

Associate Professor Dr. Iskra Georgieva Raynova, MD, has attached to the documentation a table of the National Minimum Scientometric Indicators and the number of points it collects according to the approved methodology.

The presented materials cover and exceed all evaluation criteria and the minimum requirements, by groups of indicators; meet the requirements of the Law for the Development of the Academic Staff in Bulgaria, the Rules for its implementation and the Rules of the NCIPD for holding the academic position "Professor".

**X. CONCLUSION**

The research, laboratory-diagnostic, teaching and publishing activities of Assoc. Prof. Dr. Iskra Georgieva Raynova, MD are defined her as a well-established professional, researcher, recognized clinician and responsible university lecturer. Her research and

development are original, thorough, precisely executed, valuable, with reliable results and applicable in clinical practice.

The personal and professional qualities of the candidate give me reason to vote confidently and with pleasure for the candidacy of Assoc. Prof. Dr. Iskra Georgieva Raynova, DSc and I recommend to the Honorable Members esteemed members of the Scientific Jury to give a positive vote for the academic position “PROFESSOR” in Parasitology and Helminthology” in DPTM, NCIPD, Sofia.

Professor, Dr. Mariana Stoycheva Vertigova, DSc  
Department of Infectious Diseases, Parasitology and Tropical Medicine  
MU- Plovdiv  
24.06.2020

A handwritten signature in black ink, appearing to be 'M. Stoycheva', written on a light-colored background.