

## REVIEW

by **Prof. Dr. Maria Hristiyanova Stoimenova, DSc**

member of a scientific jury,

determined by order № 134 / 29.05.2020 of the Director of NCIPD,

in a competition for the academic position "Professor"

In the field of higher education 7. Healthcare and sports, professional

field: 7.1 Medicine, scientific specialty: "Parasitology and helminthology",

for the needs of the Department of Parasitology and Tropical Medicine, NCIPD, Sofia.

announced in State Gazette no. 24/17.03.2020

I have no conflict of interest in this competition.

The only candidate in the competition is Assoc. Prof. Dr. Iskra Georgieva Raynova, DSc. The presented documentation is complete and neatly arranged, according to the requirements of the Law for the academic staff development from 2018 and the Regulations of NCIPD. The candidate has submitted on paper and electronic media: administrative documents, incl. certificates and diplomas, official note for work experience in the specialty and study load, general list of scientific publications and publications after the last habilitation, reference for citations, author's reference for the contributions, habilitation reference, reference-declaration of compliance with the minimum national requirements for participation in the competition for the academic position of "professor", as well as originals of scientific publications, presented in the competition for professorship.

### **1. Analysis of the professional development of the candidate**

Assoc. Prof. Dr. Iskra Georgieva Raynova, DSc, was born on July 5, 1956 in Sofia. In 1982 she graduated as a doctor at the Medical Academy, Sofia. Since 1982 until 1987 she worked consecutively as a district pediatrician at the Regional Hospital, in the town of Dupnitsa and resident in internal compartment of the IV city hospital, Sofia. Her career development in NCIPD started in 1987 as a physician in the Department of Parasitology and Tropical Medicine (DPTM), laboratory "Experimental and applied parasitology". She acquires specialties "Medical Parasitology" in 1992 and "Clinical Immunology" in 1996. In the period 1991-1994 Dr. Raynova held a consistent research fellow III - I degree, and from 1994 she was appointed as a Head of the laboratory "Experimental and Applied Parasitology". In 2002 he specialized in the Institute of Parasitology in Bern, Switzerland in the field of diagnostics of parasitic diseases. In 2006 she acquired PhD in the scientific specialty "Parasitology and Helminthology" after successful defense of a 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"* and in 2020 she obtained the scientific degree "Doctor of Science" after the defense of dissertation *"Helminthozoonoses (trichinosis, toxocariasis and echinococcosis) in humans - epidemiological indicators, prevalence, diagnosis and treatment"*. Since 2010 Dr. Iskra Raynova holds the academic position "Associate Professor" in the Department of Parasitology of NCIPD.

Since 2011 Assoc. Prof. Dr. Iskra Raynova heads the Department of Parasitology and Tropical Medicine" at NCIPD, and in 2016 she was appointed as a Deputy Director for the educational activity in NCIPD, Sofia.

## **2. Evaluation of the scientific works of the candidate during the overall academic development.**

Assoc. Prof. Dr. Iskra Raynova is the author of 99 scientific papers published in the period 1992 - 2020, including: two abstracts of dissertations for the acquisition of PhD and "Doctor of Science", 29 articles in peer-reviewed scientific journals (Scopus), 56 - in unreviewed scientific journals, 5 - in collections of scientific forums abroad, two individual monographs and 4 participations with separate chapters in collective monographs and manuals in Bulgarian.

According to the requirements of the Law for the academic staff development in the competition for the academic position "Professor" Assoc. Prof. Dr. Raynova participated with 56 scientific papers published after the last habilitation and different from those presented for the acquisition of the scientific degree "Doctor of Sciences", including: 12 full-text publications in foreign and 44 - in national journals and collections, as 23 of the publications are in peer-reviewed scientific journals (Scopus) and 13 - in editions with impact factor. The total impact factor after the last habilitation is 22,685. Six of the articles presented in the competition cited a total of 48 times (without auto-citations). In addition, the candidate has included her participation in the authors of a monograph "*Zoonoses in humans and animals*", publishing house "Medicine and Physical Education", 2012, and a manual "*Clinical Parasitology and Tropical Medicine*", "East-West", 2016, respectively - with 9 and 11 chapters. As evidence of significant scientific activity are 119 scientific reports presented at scientific forums in Bulgaria (114) and abroad (5) after 2010.

From the list of publications provided, I found that the candidate is a leader author (first, last or one of two) in 77% of all presented in competition publications, in 54% of the publications with impact factor and in 67% of the articles, which are subject to citation. After her last habilitation, Assoc. Prof. Dr. I. Raynova has published 79% of all its referenced publications (23/29) and 93% of her publications with impact factor (13/14) and has realized 70% of her participation in scientific forums (108/155). These indicators correspond to a clearly defined ascending trend in the scientific development of the candidate.

### **3. Research contributions**

The research activity of Assoc. Prof. Raynova has a well-defined profile in the specialty of the competition, primarily in the field of diagnostics of parasitic diseases, as well as etiology, clinic, treatment and epidemiological surveillance and control of local and imported parasitoses.

Contributions from research can be summarized in the following main directions:

**1 Applied diagnostic.** This direction is related to the profile of the laboratory in which the candidate's career development practically passes, it shaped the appearance of her scientific activity, especially during its first stage and led to a number of original contributions. A number of antigens have been obtained and characterized and are developed tests (ELISA for specificity and avidity, Western blot and others molecular-biological methods) for early and accurate diagnosis of the respective parasitoses - toxocariasis, leishmaniasis, trichinellosis, toxoplasmosis and echinococcosis.

The introduction of new, modern methods for diagnosis of parasitic diseases has important scientific and practical significance for monitoring the spread of these diseases and their successful therapy (most publications from the period 1992 - 2010, the two dissertations,

two diploma thesis and one PhD work under the management of Assoc. Prof. Raynova, two scientific projects, as well as publications with № 7, 10, 11, 13, 15, 19 and 55 after the last habilitation). With important scientific and practical significance are also the activities for the maintenance of parasitic species and strains and the development of methods for cryopreservation of *Toxoplasma gondii*, *Blastocystis hominis* and *Trypanosoma equiperdum* (implementation "Cryopreservation of the parasite *B. hominis* at (-) 70°C", 2010 by E. Kaneva, Assoc. Prof. Raynova).

**2. Clinical direction** - it includes extensive studies focused to the etiology, clinical manifestations, diagnosis and treatment of important for Bulgaria helminthiases (echinococcosis and trichinellosis), soil transmitted helminthiases (ascariasis, trichuriasis, toxocariasis), communicable parasitic diseases (enterobiasis, giardiasis, Dwarf tapeworm infection) and opportunistic parasitoses (toxoplasmosis, visceral and cutaneous leishmaniases, cryptosporidiosis, blastocystosis). Studies have been performed on some less frequently common (cysticercosis) and non-autochthonous parasitic diseases (malaria and cutaneous leishmaniasis), due to the real increased risk of their import. They are of a contributing nature the original and updated data on the geographical distribution, the structure of the affected contingents and the epidemiological indicators for the individual nosological units. Especially valuable are the developed diagnostic algorithms and approaches, contributing to the timely detection and treatment of these diseases. Data from the studies performed are extremely useful not only for parasitologists with clinical practice, but also for internists, pediatricians, infectious disease specialists, microbiologists, epidemiologists, gastroenterologists, dermatologists and general practitioners. The conducted research can be used as a scientific basis for development of documents, events of the health network and management decisions (publications No 6, 12, 14; 22, 23, 24, 27, 28, 29, 30, 33, 37, 39, 42 and 48 (in Bulgarian editions) and No 49, 51, 52, 53, 54, 55, 59 and 60 (in foreign editions). The participation of the candidate in the development of two monographs named: "*Zoonoses in humans and animals*" and "*Clinical parasitology and tropical diseases*" (respectively with 9 and 11 chapters), is very valuable through which the collected and summarized modern information on medically significant parasitological diseases becomes available not only to a wide range of specialists, but also to physicians - specialists and students in medicine.

**3. The third direction - Epidemiological surveillance and control of local and imported parasitoses** I would define as the most significant not only in the national but also in international scale and decisive for the undisputed authority of the candidate and the Department of Parasitology and Tropical Medicine at the NCIPD headed by her in the field of medical parasitology. Systematically collected and analyzed information on the frequency dynamics, prevalence and lethality associated with significant parasitological diseases in the country is used by the Ministry of Health, the European Center for Disease Control and the WHO and has essential scientific and practical importance in the development of specific measures for improving the surveillance and control of these diseases, both nationally and at the regional level. Of contribution are: data on social and natural factors contributing to the spread of echinococcosis in our country; the analysis of trichinellosis outbreaks and associated economic losses to the hospital and outpatient care; identified deficiencies in the control system of soil-transmitted infestation; the established alarming tendency for increasing number of cases and prevalence of enterobiasis. Against the background of

increased tourist and refugee flows, the analysis of import and risk data is of strategic importance from the local spread of non-native but potentially endemic parasites diseases such as malaria, cutaneous toxocariasis and leishmaniasis, schistosomiasis, filariasis and others. In this direction are the most significant publications in international publications with high impact factor - *Eurosurveillance*, *Eur J Clin Microbiol Infect Dis*, *J of Infection and Public Health*, etc. (Publications № 8, 9, 20, 25, 31, 34, 35, 47 and № 50, 51, 57, 58, 59, 60).

**4. Dissemination of scientific achievements and authority among the scientific community.** The scientific value of the publications presented by the candidate is evidenced by the growing number of documented citations (Scopus) in recent years. According to the author's reference, 65% of the observed 48 citations are in editions of English, and 23% - in editions with impact factor. According to Scopus the candidate has **an H-index of 5**.

The qualities of the scientific activity of Assoc. Prof. Dr. I. Raynova are evidenced by the fact that she participated in the implementation of six national research projects funded by the NSF, (one of which is ongoing), in two international projects funded by the program for Bulgarian-Swiss scientific cooperation (incl. one project in the period 2013 - 2015), and in two national programs funded by MoH (including National program for prevention and control of vector-transmitted infections among the population for the period 2014 - 2018). Currently Assoc. Prof. Dr. I. Raynova is Deputy Project Manager for the construction of a center for competence 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 is the main coordinator of the Expert Council in the specialty "Medical Parasitology" at MoH, Chairman of the State Examination Commission on specialty "Medical Parasitology", a member of the editorial board of the journal *Problems of Infectious and Parasitic Diseases* and a member of the organizing committee of the annual congresses of the Bulgarian Association of Microbiology. All this is convincing proof of her professional and scientific authority.

**5. Complex, qualitative assessment of the educational-methodical and the teaching activity of the candidate.** Assoc. Prof. Dr. I. Raynova actively participates in the teaching activities of the Department of Parasitology and Tropical Medicine at NCIPD, incl. – teaching medical students and trainees, participation in postgraduate courses, consultations and guidance of doctoral students and specialized physicians, participation in commissions for state examination in the specialty "Medical Parasitology". Her study workload for the period from 2015 to 2019 amounts to 850 hours (between 70 and 300 hours per year).

In the period 2016 - 2020 Assoc. Prof. Raynova is the head of 4 successfully defended doctoral students, one continuing PhD work and one diploma thesis, successfully defended in 2017.

**6. General assessment of the candidate's compliance with the mandatory ones requirements of the Law for academic staff development.** According to the submitted reference-declaration, supported by originals evidence, Assoc. Prof. Raynova covers or significantly exceeds the minimum national requirements and the requirements of NCIPD for the occupation of the academic position "professor" for the individual groups of indicators, as follows: A (Dissertation work for PhD 50/50; B. Dissertation work for awarding scientific degree "Doctor of Sciences" 100/100; C. Substitute scientific publications in refereed editions

233.66 / 100; D. Publications and reports in unrefereed scientific publications 217,5 / 200, E. Citation or review in refereed scientific publications) 105/100 and indicators from group E. 390/100.

### CONCLUSION

Assessment of overall career development, research, teaching and administrative activity of Assoc. Prof. Dr. Iskra Georgieva Raynova shows that the candidate fully meets the criteria of the Law for academic development and of the National Center for Infectious and Parasitic Diseases for the academic position "Professor" in the scientific specialty "Parasitology and Helminthology". Her professional path is an example of consistent, profound and upward development, containing all the obligatory stages of academic growth. It is indisputable that the candidate is a fully built scientist, with contributions in various fields of her scientific specialty - applied-diagnostic, clinical-therapeutic and epidemiological. She has the necessary professional competencies for laboratory and diagnostic work, has significant experience in project activities, such as participant and as a team leader, experience as a teacher and researcher, as well as significant organizational and methodological experience.

Therefore, with pleasure and conviction I suggest to the esteemed jury to choose Assoc. Iskra Georgieva Raynova, DSc for holding the academic position of "professor" at "Parasitology and helminthology" at the National Center for Infectious and Parasitic diseases, Sofia.

Reviewer:



Prof. Dr. Maria Stoimenova, DSc

26.06.2020