



REVIEW

on the materials for participation in the competition for the academic position "Professor", field of higher education 6. "Agrarian Sciences and Veterinary Medicine", professional direction 6.4. "Veterinary Medicine", scientific specialty "Epizootology, infectious diseases and prevention of infectious diseases in animals", in the discipline "Pathology (Pathological Physiology)" for the needs of the Department of "Anatomy, Physiology and Animal Husbandry Sciences" at the Faculty of Veterinary Medicine (FVM) at the University of Forestry (UF), announced in the Official Gazette, no. 18/01/03/2024, procedure code VM-P-0224-122.

Candidate for participation in the competition: Associate professor Krasimira Ivanova Genova, PhD, lecturer in the Department of "Anatomy, Physiology and Animal Breeding Sciences" at FVM, UF.

Reviewer: Prof. D.Sc. Teodora Petrova Popova, Ph.D., University of Forestry, Sofia, field of higher education 6. "Agrarian Sciences and Veterinary Medicine", professional direction: 6.4. "Veterinary Medicine", scientific specialty "Epizootology, infectious diseases and prevention of infectious diseases in animals", appointed as a member of the Scientific Jury by Order No. ZPS-197/15.04.2024 of the Rector of UF.

Brief biographical details of the applicant.

The candidate in the current competition, Krasimira Genova, graduated with honors from the Moscow Veterinary Academy "K. I. Scriabin" in the USSR in 1987 with the specialty "Veterinary Doctor". In the same year, after passing the competition, she started working as a research assistant III degree at RPVMII - Sofia, where she worked until 05.04.1999 as a research assistant III - I stage and Head of Laboratory. She was engaged in the production and internal control of vaccines, serums and diagnostics against viral infections in domestic animals and birds. In 1994, she defended her dissertation work and obtained the educational and scientific degree (ESD) "Doctor" in scientific specialty 03.04.12. "Epizootology, infectious diseases and prevention of infectious diseases in animals". From 04.05.1999 to 04.01.2000, she worked as a Biotechnologist, research assistant 1st grade, "Virus biopreparations" department at the Veterinary Medical Institute of Immunology (VMII) "Bioproduct", Sofia. From 04.01.2000 to 01.11.2001 she was the head of the same department. Performed organization and control of the production of the entire range of viral biopreparations of the institute, preparation of dossiers of the preparations, work with laboratory animals and other activities. From 01.11.2001 to 31.03.2006 Dr. Kr. Genova was Ch. assistant professor at the Faculty of Medical Sciences, UF, conducting practical exercises and seminars in the disciplines "Immunology" and "Pathological Physiology", as well as some of the lectures. From 31.03.2006 until now, she is an Associate professor at the Faculty of Veterinary Medicine. During the periods 04.06.2008 - 12.01.2012 and 03.04.2018 - 05.03-2020 she was Deputy, dean of academic work at the faculty, and from 06.03.2020 until now she is the Dean of the FVM at UF. Prof. Genova speaks Russian and English, but also has knowledge of French. She has practical experience in conducting mass vaccinations, consulting on farms, testing and implementing new bioproducts. Works with computers, multimedia and laboratory equipment in the field of immunology and clinical pathology. She is a member of the Bulgarian Veterinary Union, the European Biosafety Association (EBSA) and Sigma Xi. In addition, she is a non-staff collaborator of the "Criteria" Association on projects to help children in disadvantaged social situations.

Conformity of the applicant's submitted documents and materials with those required according to the Regulations for development of academic staff (RDAS) at UF.

All necessary documents and materials have been submitted by Assoc. prof. Genova for participation in the competition for AP "Professor". These fully correspond to the requirements according to the Regulations for DAS at UF.

Assessment of the candidate's educational and teaching activities.

The teaching experience of Krasimira Genova is 22 years and six months, of which 4 years and 4 months as the Chief assistant professor and 18 years and 2 months, as an Associate professor. Her average academic employment is over 360 hours. She is a holder of the following compulsory academic subjects: "Pathology (Pathological Physiology)", "Immunology" and "Molecular Biology", as well as the optional subject "Working with laboratory animals. Organization of the experiment and animal welfare'. From the academic year 2017 to 2020-2021, she also taught the compulsory subject "Biochemistry". Prof. Genova participates in the teaching of the same disciplines in English. This long-term teaching experience with the fulfillment of the statutory educational employment is an indicator of her **considerable experience as a teacher** in the specified academic disciplines.

In addition, under the "ERASMUS+" program, Assoc. prof. Genova gave 8 hours of lectures in English to students, doctoral students, specialists and teachers at the Veterinary Faculty of the University of Sassari, Italy, 25-29.05.2015, Veterinary Faculty of the University in Zagreb, Croatia in May 2018 and in UniLaSalle, Rouen, France, in the period 12-16.02.2024. She also participated in mobility for the purpose of monitoring students on internships in Thessaloniki and Athens in the period 07-13.07. 2022.

Assoc. prof. Kr. Genova is the author of **study programs** in the disciplines "Pathology (Pathological Physiology)", "Immunology", "Molecular Biology", "Working with laboratory animals. Organization of the experiment and humane treatment of animals" and "Biochemistry" (co-author with Assoc. prof. M. Petrichev and Prof. Z. Shindarska).

She also **supervised three doctoral students**, two of whom, in an independent form of study, successfully defended their dissertations (Roman Pepovic - on 12.10.2015 and Iliyan Manev - on 22.06.2017), and the defense of the third (absentee) is due in less than a month (Roger Hanna Al Hanna - on 06/14/2024).

Assoc. prof. Kr. Genova is also involved in continuing education at UF. She was the Head of the course "Training and upgrading the qualifications of teachers in the field of veterinary medicine" (April 2-5, 2009) and a member of the Methodical Council at the Center for Continuing Education (2017 - 2021). She authored the curriculum for the course "Protection and welfare of laboratory animals used for educational or scientific purposes" and participated in training students and as a lecturer in a group specialization in "Veterinary dermatology of small and exotic animals". She was the leader and participant in the composition of examination committees for the training of individual part-time specialists in "Epizootology and prevention of infectious diseases in animals".

Evaluation of the candidate's scientific, applied scientific and publication activities.

Assoc. prof. Genova's academic experience is 36.5 years, and for 29.5 years, she has the Doctor's degree. The total number of points she presented for the groups of indicators is **1452.31** with a required minimum of 550 points. On indicator 1 (**group A**) she has **50** points out of 50 required for a defended dissertation on the topic: "Studies on immunity and immunoprophylaxis of respiratory syncytial virus infection in calves" and acquired ESD "Doctor", according to indicator 2 (**group B**) - **0** points out of 0 required, according to the indicators from **group C** - **100** points out of 100 required (for habilitation thesis - monograph), according to indicators 5 - 12 from **group D** - **417.31** points out of 200 required, of which **33.5**

points cannot be recognized for D7, because during the period of publication of the mentioned articles, the relevant editions were not referenced. Thus, the points for this group of indicators become **383.81**. The relevant publications can be referred to D8, to which 11.2 points will be added. According to indicators 13 - 15 of **group E - 580** points out of 100 required, according to indicators 16 - 24 of **group F - 305** points out of 100 required. Thus, the total number of points for all indicators is **1430**. These results categorically show that the scientific production of Assoc. prof. Genova **covers and significantly exceeds the minimum national requirements** for the scientific and teaching activities of candidates for the academic position of "Professor".

Participation in scientific, scientific-applied and educational projects.

Data on Assoc. prof. Genova's participation in **29** projects are presented, of which **25** are **research** projects and **4** are **educational** (under EU programs). In addition, she was the head of the "**Infrastructure** project for the construction and equipment of an immunology laboratory with a view to serving science and practice with quality and competitive research", financed through SRS-UF. With it, she is the initiator and participant in the creation, equipment and development of the "Educational and Scientific Laboratory of Immunology" at FVM, UF. Of the research projects, 11 were financed through the SRS of UF (she was the head of three of them), 9 were research tasks at VMII "Bioproduct-Ltd.", Sofia (of 2 of them she was the head), two - at FDM - MU, Sofia, one - to NDRVMI, Sofia, one - to AA and one - to FSR-MES ("Development of DNA markers (cast, mstn) for fattening capacity and meat quality in a synthetic population of Bulgarian dairy, Karakachan and Shumen sheep breeds" - Contract No. B 01/22/05.12.2012). **This activity presents her as a well-prepared, active, experienced and promising scientist and researcher.**

Characteristics of published scientific results.

Assoc. prof. Krasimira Genova submitted a total of **64 papers** to participate in the competition for professorship. **One** of them is a habilitation work - **monograph**: Genova, K. Respiratory disease complex in cattle Intel Entrans Sofia, 2024, p.136; ISBN 978-619-7703-61-0. It is written on 136 standard pages and illustrated with 19 figures and 11 tables. The information in it is based on own results and data from 421 literary sources. It addresses one of the most important problems in cattle breeding, presenting the etiology, epidemiology, risk factors, clinical signs, diagnosis, treatment, prevention and control of respiratory disease complex in cattle. With the rich and up-to-date information included, the monograph can be used as a valuable teaching aid for undergraduates, postgraduates and doctoral students, as well as a handbook for veterinary practitioners.

There are **63** scientific articles with the participation of Assoc. prof. Genova, printed in the country and abroad. Of these, **6** are in journals with impact factor (IF) or SJR. The **total IF** of the articles is **0.661** and the **total SJR is 0.874**. The presented list of publications in scientific issues, referenced and indexed in world-renowned databases of scientific information (Scopus, Web of Science) without impact factor or impact rank includes **28** titles, but four of them cannot be taken into account because they were published in the period 2012-2015 in CABI-referenced proceedings and journals, and they were referenced in Web of Science from 2006 to 2011, as well as from 2016 to now. Thus, the articles from this group become **24** items. Scientific publications in non-refereed peer-reviewed journals or published in edited collective volumes are **29** in number, of which **17** are in English and **12** in Bulgarian. Taking into account the four articles from the period 2012-2015 from the previous group, their number in this group becomes **33**. Apart from these publications, a Textbook of Pathophysiology co-authored with

Associate professor A. Filchev is mentioned, which is prepared, but not printed. **Twenty-five** of the articles are published in Bulgarian, and **39** in a foreign language. **Thirteen** of them have been published in foreign journals, **22** are in national journals and **28** are reports in proceedings of international and national scientific forums.

Reflection of the candidate's scientific activity in the literature (citability).

From the presented citations of publications with the participation of Assoc. prof. Genova, I accept **47** citations of **17** scientific publications. This under No8 is an indirect self-citation, as is one of the shown citations of article No9. Citation data for 13 publications in 18 dissertations for ESD "Doctor" at home and abroad are also presented, but since they are not registered with an ISBN, they cannot be accepted. **These results are completely sufficient and testify to the importance and impact of the results** of Assoc. prof. Genova's scientific production on a global scale.

Other activities

Assoc. prof. Genova has participated **in Scientific juries** for the acquisition of the scientific degree "Doctor of Sciences" (2 items), for the acquisition of the ESD "Doctor" (11 items, 6 of which she was the chairman of), for the acquisition of an academic position "Professor" (2 nos.), for the acquisition of AP "Assoc. prof." (6 nos., 1 of which she was the chairman of) and for AP "Chief assistant prof." (4 nos., 1 of which she was the chairman of).

She was a **reviewer** of three study programs at FVM, UF (on, "Pathology (General Pathomorphology)", "Pathology (Special Pathological Anatomy)" and "Animal Physiology"), of two scientific projects at Thrakia University in St. Zagora, one - to the SRS at UF and on a diploma thesis. She has reviewed articles in journals such as "International Journal of Zoology and Animal Biology", "Tradition and Modernity in Veterinary Medicine", "Proceedings of the Bulgarian Academy of Sciences", "Bulgarian Journal of Agricultural Science" and "Livestock Sciences". She was a reviewer of a chemistry textbook for students of veterinary medicine with authors V. Lachkova and Y. Ivanova.

Assoc. prof. Genova also participates **in editorial boards of four scientific journals:** "Tradition and Modernity in Veterinary Medicine" (journal of FVM - UF), "International Journal of Zoology and Animal Biology", "Veterinary Practice" and "Veterinary Collection".

She has also participated in **leading 17 scientific forums**, 10 of which are international, 4 with international participation, one Scientific Session, one youth and one National Student Conference.

Assoc. prof. Genova is a **member of commissions** at the BAFS: "Commission for Immunological Veterinary Medical Products" and "Commission for Pharmaceutical Veterinary Medicinal Products" and a consultant to the "Expert Commission for Recognition of Professional Qualifications". She was also a member of the "Commission for Establishing Compliance with the Ministry of Education and Culture" (Order No. 34/17.01.2019 of the Rector of UF) and of the "Working Group on Implementation of EISU" (Order No. 47/05.02.2019 of the Rector of UF). For the period 2012-2020, she participated in the following commissions at the FC: • Commission for the Information of the FVM on the Website of UF; • Commission on Research and Development; • Erasmus Commission; • Commission on quality of education; • Committee on teacher attestation - chairman; • Committee for consideration of documents regarding recognition of study period and • Committee for selection of documents under the "Erasmus+" program - chairman. She also participates in commissions at the AC of UF: • Commission on updating the normative base; • Committee on the budget and the staff and • Committee on educational activity and quality of education.

Assoc. prof. Genova participates in the "Committee for Compilation and Verification of the Biology Test in English for candidate student exams" and in three temporary committees for taking exams for doctoral minimums, in one of which she was the chairman, in another - an examiner, and in a third - member, as well as in committees for organizing the holding of a state exam, etc. She was a member of the Quality Management Council at UF (Rector's Order No. 47/05.02.2019). She also participates in accreditation procedures. She was the Deputy Chairman of the Commission for the preparation of a self-assessment report (SAR) for ESD "Doctor" (6.4. Veterinary Medicine, scientific specialty "Epizootology, infectious diseases and prevention of infectious diseases in animals"), Deputy- Chairman of the Committee for the Preparation of the SAR for the ESD "Doctor" (6.4. VM, n. spec. 01.06.17 "Physiology of Animals and Humans"), Deputy Chairman of the Committee for the Preparation of the SAR for the SRS "Doctor" (6.4 VM, n. spec. 04.03.09 "Surgery, radiology and physiotherapy", code 01.06.26 "Morphology" and code 04.03.07 "Parasitology and invasive diseases of animals and humans"). She was the chairman of a working group for preparation of a project for program accreditation of a specialty from the regulated professions (6.4. VM in FVM of UF, Sofia for ED "Master" full-time form of education) and chairman of a committee on preparation of a report on the implementation of mandatory recommendations within the post-accreditation period. She has undergone specialized training on the introduction of GMP (Good Manufacturing Practice) in production enterprises - NCIPD and Center for Hygiene, as well as training on the topic "Laboratory control of the zoonoses - risk analysis of zoonotic threats in laboratory animal facilities, monitoring and inspection" (Phare line). She has completed a course for an auditor of a quality system according to the ISO 9001:2008 and ISO standard (03-04.10.2013), as well as two short-term specializations: at the University of Agronomic Sciences and Veterinary Medicine in Bucharest, Romania with 8 hours of lectures in the field of pathological physiology - 03-16.06.2023 and at the University of Córdoba, Faculty of Veterinary Medicine, Spain with 8 hours of lectures in the field of pathological physiology - 17-30.09.2023. She passed a foreign language specialization and specialized course in English to learn professional terminology at NBU.

As high achievements of Assoc. prof. Genova, I would highlight her participation in the **patenting** of two methods for obtaining live lyophilized vaccines (against pseudoplague in birds and parvovirus in dogs), in three **rationalizations** and 6 **implementations** related to the specific prevention and diagnosis of some infectious diseases to the animals.

Contributions to the candidate's works (scientific, scientific-applied, applied).

The most significant scientific contributions, reflected in the scientific publications submitted for participation in the competition, are achieved by means of modern approaches and research methods that guarantee the reliability of the results obtained. The objects of research are the pathogenetic mechanisms of reactivity and resistance, the factors affecting the immune response, the cellular response to various chemical or biological substances, etc.

Original scientific contributions:

- The interferon-inducing activity of a Bulgarian RSV vaccine strain is established and the absence of the characteristic for human RSV allergic reaction upon re-injection of animals is demonstrated (publication 26).
- A stronger T-cell immune response is demonstrated in lambs tracheally challenged with a vaccine strain of BRSV compared to subcutaneous vaccination (publ. 28).
- The need for vaccination is analyzed and the dynamics of the serological response after a different way of administration of a live attenuated vaccine against myxomatosis in rabbits is followed. A method of application is proposed depending on the breed (publ. 5, 18 and 20).

- The harmlessness of an attenuated vaccine strain of myxoma virus has been proven by studying its influence on spermatogenesis in rabbits (21).
- Specific and sensitive tests have been developed for rapid diagnosis of viral diseases in animals (36, 52).
- The positive effects of *Tribulus terrestris* extract on the weight and health status of Simmental calves during the lactation period have been demonstrated (48).
- For the first time, the dose-dependent effect of Bulgarian experimental zinc methionate (ZnMeth) compared to zinc sulfate (ZnSO₄) on some hematological indicators, the factors of natural and cell-mediated immunity in rats, pigs and birds is studied (9, 11, 14, 15, 62).
- The immune parameters of rams from the Karakachanska and Mednochervna Shumenska breeds are studied and analyzed and systemic immune reactions depending on the breed are proven (1, 25).
- Research and identification of the polymorphism in the ABCG2 gene related to milk production is carried out and the frequency of occurrence of alleles of the MSTN gene, responsible for the synthesis of the myostatin protein, regulating muscle growth in thin-wool breeds of sheep bred in Bulgaria, is determined (38, 50, 51, 61).
- An *in vitro* study of the most suitable parameters for preparation of hard tissues with the QSP mode of dental lasers is performed. The method has been compared with classical tools such as the high-speed drill and the proven gold standard for Er:YAG laser enamel preparation and the MSP mode (37).
- The effect of herbs on productive indicators and meat quality in male lambs of the Avasi breed and in broiler chickens is studied (44, 45, 46, 47).

Scientific contributions of a confirmatory nature:

- Bacterial pathogens have been identified and their importance in swine respiratory disease complex has been determined. On this basis, effective therapeutic interventions and adequate control measures have been identified (6, 42, 43).
- The effectiveness of vaccination against enzootic pneumonia in pigs in industrial pig farms is evaluated and the dynamics of antibodies during the different technological periods are followed (2, 17, 19).
- A comparative assessment of the effects of different doses of organic and inorganic iron on the non-specific reactivity of birds is made (41).
- Fumonisin-induced immunotoxicity has been demonstrated in broiler chickens and in mononuclear cells of various origins (7, 32, 56, 57).
- Using the immunocytoadherence technique, the role of sex, age and season on the absolute and relative number of lymphocytes in pheasants is established (34).

Scientific-applied contributions:

- An analysis of the spread of myxomatosis in rabbits is made and the need for vaccination is justified (18).
- The modulating role of probiotics on their immune system has been established and their role in improving the health and productivity of animals and birds has been proven (3, 12, 55).
- Positive effects have been found in different therapies of atopy in dogs – reactive followed by proactive therapy in atopic otitis and allergen-specific immunotherapy (ASIT) in atopic dermatitis (30, 31).

Evaluation of the candidate's personal contribution.

Four of Assoc. prof. Genova's publications are **independent** (three scientific articles in English and the monograph), **13** are with one co-author, **11** - with two co-authors and the

remaining 36 - with three or more co-authors. In **14** of the scientific publications she is the **lead** author, in **18** she is in **second** place and in the rest - in third and subsequent places in the author groups. These data clearly outline **her significant personal contribution** to published scientific results.

Critical notes and recommendations.

I have none of these.

Personal impressions.

I have known Krasimira Genova from the very beginning of her professional and creative path, as we entered together as research associates III degree in RPVMII in Sofia. I am convinced of her high professionalism, excellent theoretical and practical training in the scientific specialty, competence, intelligence and responsibility at work. Her experience as a scientist, teacher and leader is vast. Her creative activity, precision in her work and her communication skills are important for her success in scientific growth and for establishing her as a **prominent and respected teacher, scientist and leader.**

Conclusion.

The documents submitted by the applicant and the presented materials correspond to the requirements according to the Regulations for DAS at UF. The points obtained on the scientometric indicators also correspond to the requirements of Regulations for DAS at UF., significantly exceeding the minimum number of points required for the academic position "Professor". The academic and teaching activity of the candidate, as well as her scientific and publication activity, deserve high evaluation. The reflection of her scientific activity in the literature is also at a very high level. **According to Art. 2a, (1) of the RDAS in UF, the candidate not only meets the minimum national requirements for scientific and teaching activities, defined in the Regulations for the Implementation of the Law on the Development of the Academic Staff in the Republic of Bulgaria for the professional direction of the competition, but also significantly exceeds them.**

Based on the information presented above, I propose to the respected members of the Scientific Jury to vote positively and the candidate Assoc. prof. Krasimira Ivanova Genova to occupy the academic position "Professor" in the field of higher education 6. "Agrarian Sciences and Veterinary Medicine", professional direction 6.4. "Veterinary Medicine", scientific specialty "Epizootology, Infectious Diseases and Prevention of Infectious Diseases in Animals", in the discipline "Pathology (Pathological Physiology)" for the needs of the Department of "Anatomy, Physiology and Animal Husbandry Sciences" at the Faculty of Veterinary Medicine at University of Forestry.

20.05.2024
Sofia

Reviewer:

(Prof. D.Sc. T. Popova, PhD)