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Statement

by prof. Dr. Snezhana Mihailova Grozeva, Institute of Biodiversity and Ecosystem Research (IBER), BAS

Concerning: competition for the occupation of the academic position "docent" in professional field 4.3. Biological sciences, scientific specialty "Genetics", for the needs of the RG "Biomonitoring and Ecological Risk Assessment", Division "Biodiversity and Ecology of Invertebrate Animals", Department "Department of Ecosystem Research, Ecological Risk and Conservation Biology" of IBEI-BAN

In the competition for the academic position of "Associate Professor" in the specialty "Genetics" (field 4.3. "Biological Sciences") for the needs of IBEI-BAS, announced in the State Gazette, issue 25/10.03.2026, a single candidate appeared - Senior Assistant Professor Dr. **Tsvetelina Zhanova Gerasimova** – an employee of the same institute.

Tsvetelina Gerasimova was born on October 22, 1976 in Vratsa, in 2002 she graduated from the Master's program in Biology (specialization "Ecology and OPS") at the Faculty of Biology of Sofia University "St. Kliment Ohridski". In 2012 she successfully defended her dissertation on the topic "Comparative study on the sensitivity of the karyotype of monitor species of small mammals to the action of chemical mutagens from the environment" with the scientific supervisor Assoc. Prof. Dr. Margarita Topashka-Ancheva. Dr. Gerasimova's main scientific interests are in the field of applied cytogenetics, genotoxicology and the assessment of the biological activity of natural and synthetic compounds.

To participate in the announced competition on paper and electronic media, the candidate Dr. Gerasimova has submitted all the required documents.

In the competition documents, Dr. Gerasimova has submitted a list of 26 publications, of which an abstract and three publications related to the topic of the dissertation and 22 scientific publications with which she participated in the competition: of which: 8 articles in Q1, 2 in Q2, 4 in Q3, 7 in Q4 and one chapter of a book. In addition, a list of 13 publications outside the reference to cover the minimum scientometric requirements is attached, which mainly includes published reports from participation in scientific forums and publications in journals without an impact factor. Some of the articles have been published in renowned scientific journals with high IF (Bioorganic and Medical Chemistry and European Journal of Medical Chemistry from Elsevier; Zeitschrift für Naturforschung from De Gruyter; Life, Biological Trace Element Research, Pharmaceuticals and Molecules from MDPI). An indicator of collaboration and teamwork skills is the fact that a large part of the publications are co-authored with colleagues from both the research group in which the candidate works, and with colleagues from other units of the Bulgarian Academy of Sciences, from the Institute of Rose and Other Aromatic Plants, and from abroad.

The candidate's publication activity presented in the competition covers and in some sections exceeds the minimum national scientometric requirements, as well as the higher minimum requirements of the Bulgarian Academy of Sciences for an associate professor,

respectively in category B (130 points instead of 100), in category G (265 points instead of 220) and category D (200 points instead of 60), as well as the required minimum in terms of indicators for holding the academic position of "associate professor" at IBEI (19 instead of 10 publications with an impact factor). The results of the conducted research have been presented in 46 participations in scientific forums in our country and abroad.

The scientific papers presented in the competition are original in nature and the most important scientific contributions in them can be divided into several main areas:

• Cytogenetic screening and genoprotective potential of natural products and plant extracts on the example of *Rosa* sp.;

• Cytogenetic screening of newly synthesized aminophosphonates and their derivatives;

• Cytogenetic screening of industrial chemical agents and organic solvents;

• Ecotoxicological studies and assessment of genetic risk in exposure to heavy metals in wild and laboratory small mammals; • Karyological and comparative cytogenetic studies.

The main part of the studies and publications presented in the competition are devoted to systematic screening studies, conducted mainly in short-term experimental schemes (24-48 hours) under controlled conditions, of essential oils, hydrosols, wastewaters obtained by classical steam distillation and of extracts obtained by subcritical water distillation of representatives of *Rosa* spp. (*Rosa damascena* Mill., *Rosa alba* L., *Rosa centifolia* L. and *Rosa gallica* L.). Established classical cytogenetic methods were used - analysis of chromosome aberrations, micronucleus test and study of mitotic activity in in vitro and in vivo test systems: plant test system, human lymphocytes in vitro and animal in vivo model - laboratory mice of the ICR line. This approach allows for a comparative assessment of the effects in organisms of different hierarchical levels of biological organization and provides a more complex interpretation of the cyto-/genotoxic and cyto-/genoprotective potential of the tested products and the genotoxic risk when using them.

By applying cytogenetic screening of newly synthesized aminophosphonates and their derivatives on laboratory mice, a preliminary cytogenetic assessment of the clastogenic and antiproliferative activity of the studied preparations in normal somatic cells in vivo was made as a key element of the screening for biological safety and selection of candidate molecules for subsequent experimental studies.

Within the framework of a comparative in vivo cytogenetic study, the genotoxic potential of the industrial organic solvent tetrahydrofuran (THF) was assessed by analyzing chromosome aberrations and mitotic index in bone marrow cells from five species of small rodents – laboratory mice (ICR line) and wild species widely distributed in Bulgaria (*Apodemus flavicollis*, *Mus spicilegus*, *Clethrionomys glareolus* and *Microtus arvalis*), and the importance of using different test systems in such analyses to obtain a more complete picture was shown.

Studies have been conducted aimed at assessing lead loading in high mountain ecosystems by using wild small mammals as bioindicators. The combined use of wild small mammals and laboratory animal models as bioindicator species allows for the assessment of

both actual contamination in natural ecosystems and genotoxic effects under controlled experimental conditions.

A generally accepted criterion for the recognition and significance of the conducted research is their citation in publications of other researchers - in the competition materials, 100 citations of a total of 18 of Dr. Gerasimova's works are presented.

Dr. Gerasimova has participated in the development of 14 projects, of which 10 are Bulgarian and 4 of them are international. The candidate has a clearly established profile of research work in the field of genotoxicology and her habilitation will strengthen the group of researchers in the field of genetics at IBEI.

Conclusion

The original scientific contributions in the field of applied cytogenetics, genotoxicology and the assessment of the biological activity of natural and synthetic compounds, the recognition of colleagues at home and abroad, and my personal impressions of the candidate give me reason to confidently recommend to the members of the National Journal to propose to the Scientific Council of IBEI to support the election of Dr. Tsveti Gerasimova as associate professor in the scientific specialty GENETICS (01.06.06) for the needs of the section "Biomonitoring and Environmental Risk Assessment".

Sofia, 10.06.2026 prof. PhD Snejana Grozeva