

# **Report**

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Member of the scientific jury by order of the Rector P33-4708/25.09.2020

on: competition for the academic position of "Associate Professor" in the field of higher education 4 "Natural Sciences, Mathematics, Informatics"; professional field 4.3. Biological Sciences; scientific specialty "Cell Biology" for the needs of the Department of "Developmental Biology", Faculty of Biology "of Plovdiv University" P. Hilendarski”, published in SG no. 57 of 26/06/2020. Only one candidate participates in the competition for "Associate Professor" - Ch. assistant Tsvetelina Georgieva Batsalova.

## **Brief biographical data about the candidate**

Tsvetelina Batsalova obtained a bachelor's degree from the Paisii Hilendarski University of Plovdiv in 2005, and in 2006 she graduated with a master's degree in biology with a specialization in cell biology. After graduating from higher education she started working at the Faculty of Biology of Plovdiv University as a laboratory assistant. She has been a visiting researcher at Lund University and at the Karolinska Institute, Sweden. During the period 2009-2011 she was a full-time doctoral student in Cellular Biology, and in 2011 she was appointed as an assistant in the same specialty. In the same year she received the ONS "Doctor" with a dissertation on "The role of MHC class II and post-translational modifications of type II collagen for intercellular communication in rheumatoid arthritis." Since 2013 she is a senior assistant at the Faculty of Biology at the University of Plovdiv.

## **Scientific production and scientific-metric indicators**

In this competition, Ch. Assistant Professor Tsvetelina Batsalova presented the following materials: 14 publications in journals with impact factor, 3 publications in scientific journals without impact factor, 2 publications in conference proceedings and congresses and two textbooks. The candidate is a leading author in ten of the presented publications. 76 citations have been documented, all in international peer-reviewed journals. Ch. Assist. Ts. Batsalova was the scientific supervisor of 7 successfully defended graduates. She has participated in 12 funded research projects, being a leader in two of them. From the attached reference for meeting the criteria of the Faculty of Biology of PU in direction 4.3 Biological Sciences, for holding the academic position "Associate Professor" it is seen that the scientific-metric data of the candidate cover each indicator, and in most cases the minimum criteria are exceeded.

### **Summary of the candidate's contributions**

A significant part of Ts. Batsalova's research interest is focused on a socially significant autoimmune disease, such as rheumatoid arthritis. In the process of scientific work, adequately selected animal models were used in order to study the pathogenetic mechanisms of this disease as well as the application of adequate therapeutic approaches. Interesting results, both in a fundamental and in applied aspect, have been obtained regarding the influence of reactive oxygen species on the effectiveness of immunospecific vaccination with complexes of MHC class II molecule and glycosylated K II peptide. Also of interest are studies on the design and biological analysis of glycopeptides that retain a high affinity for binding to MHC proteins and elicit a response from T-cell hybridomas. Groups with different T-cell response patterns have been defined that are relevant in vaccination assays in collagen-induced arthritis. Special attention is paid to the mechanisms of biological activity of some natural products and their influence on human and animal cells. Essential oils from the fruits of the plant *Vitex agnus-castus* were found to show different degrees of cytotoxic effect on 4 different cell lines. Silver linden flower pectins have also been shown to induce elevations in reactive oxygen species levels in unstimulated phagocytes, but suppress opsonized zymosan particles-induced oxidative stress.

Interesting results for the pharmacological science were also obtained with polysaccharides isolated from purslane, lavender and linden in terms of induction of oxidative stress in phagocytes, as well as anti-proliferative effect to normal and tumor cell lines. Extensive analyzes have been performed on the cytotoxicity of extracts of *Clinopodium vulgare*, *Smilax aspera*, *Fischerella major*, etc., and the results obtained could find application in the pharmacological practice at a later stage. I would also like to point out, as results related to medicine, prophylaxis and dietetics, the results obtained regarding the immunomodulatory effect of prebiotics towards the applied probiotic.

### **Teaching activity**

The candidate in the competition has 9 years of teaching experience, having given lectures in 7 subjects for bachelors and masters.

### **Conclusion**

Summarizing all the above, I would like to point out that my assessment of the research and teaching activities of Ch. assistant Tsvetelina Batsalova is emphatically positive. The scientific production of the candidate corresponds to the scientific specialty for which the competition was announced - "Cell Biology". Documents are presented, certifying that Tsvetelina Batsalova has the necessary work experience as a university lecturer and has a study load, according to the requirements of the current regulations.

The candidate is a university lecturer with the necessary pedagogical and methodological competence, which allows her to conduct an effective and complete learning process. In conclusion of all the above, it can be summarized that the only participant in this competition, Ch. Assistant Tsvetelina Georgieva Batsalova meets the terms and conditions for holding the academic position "Associate Professor" according to the Law on the Development of Academic Staff in the Republic of Bulgaria, the Regulations for its implementation, as well as the criteria for development of the academic staff of Paisii Hilendarski University.

I strongly recommend the members of the Scientific Jury to vote positively for the award of the academic position of Associate Professor to Ch. Assistant Professor Tsvetelina Batsalova.

10.11.2020 Prof. Albena Momchilova, DSc.