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Annex No. 11 to the MU Directive on Habilitation Procedures and Professor Appointment Procedures

PUBLIC LECTURE EVALUATION

Masaryk University	
Faculty	Faculty of Science
Procedure field	Molecular Biology and Genetics
Applicant	doc. Mgr. Václav Brázda, Ph.D.
Lecture date	September 16, 2021
Lecture topic	Interactions of local DNA structures with proteins - combination of bioinformatics, biophysical and molecular biology approaches
Persons present (number)	97
Designated evaluators (board members)	prof. RNDr. Renata Veselská, Ph.D., M.Sc. (online) prof. Ing. Jan Vacek, Ph.D. (online) prof. RNDr. Ľubomír Tomáška, DrSc. (online)

Public lecture by Assoc. Prof. Václav Brázda was given online via Zoom on September 16, 2021. The duration was 50 min followed by 20 min of discussion. This lecture was presented in English, and it was accompanied by a very precisely prepared presentation with correct and logical structure and with illustrative graphics.

The first introductory part of this lecture was composed as a brief overview of his professional career, research team and workplace at Institute of Biophysics in Brno. In the next part, Assoc. Prof. Brázda elucidated his motivation to study the interactions of local DNA structures with proteins and described the possible bioinformatics, biophysical and molecular biology methodical approaches suitable for this research theme. The main part of the lecture was focused on the achieved results and was subdivided into five parts: (1) G-quadruplexes (G4) in viruses; (2) G4 and inverted repeats in bacteria; (3) *in situ* inverted repeats and G4-sensor in *Saccharomyces cerevisiae*; (4) single-molecule protein interaction analysis with G-quadruplexes; (5) G-quadruplexes stabilization by IFI16 protein. Each part of the Results was accompanied by references to the published research papers on the above-mentioned topics. In the Conclusion, the most important findings achieved by Assoc. Prof. Brázda and his research team were highlighted. Furthermore, his wide and fruitful international research cooperation was acknowledged.

Following topics were raised by the audience for discussion:

- When p53 is bound to the DNA molecule after DNA damage, is it a specific or random binding?
- What types of genes are regulated by binding of proteins to the G-quadruplexes?
- What methods can be used for monitoring of G-quadruplexes under *in vivo* conditions?
- Is there any correlation between G-quadruplexes and GC content?
- Are telomeric G-quadruplexes targets for cancer treatment?
- What functional associations were reported for G-quadruplexes in various types of cancer (apart from breast carcinoma)?

The teaching performance by Assoc. Prof. Brázda was very clear, nice, and comprehensible. He undoubtedly demonstrated deep knowledge and excellent orientation in the field, as well as the ability to occupy the audience with his presentation.

Conclusion

The lecture delivered by Assoc. Prof. Václav Brázda, entitled “Interactions of local DNA structures with proteins - combination of bioinformatics, biophysical and molecular biology approaches” and delivered as part of the professor appointment procedure, **demonstrated** sufficient scholarly qualifications and pedagogical capabilities expected of applicants participating in a professor appointment procedure in the field of Molecular Biology and Genetics.

The lecture took place online at 10:00 AM (CEST). The above-mentioned members of the board attended the lecture and provided its evaluation. All designated evaluators are familiar with the text of the evaluation and agree with it.

Date: September 21, 2021

Digitally signed by
prof. RNDr. Renata Veselská, Ph.D., M.Sc.
Masarykova univerzita

Renata Veselská

signature