STATEMENT

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Ref: a competition for acquiring the academic position "ASSOCIATE PROFESSOR" in the scientific specialty "***Biochemistry***", for the needs of the Department of Biochemistry, Molecular Medicine and Nutrigenomics" at Medical University Varna "Prof. Dr. P. Stoyanov" – Varna

1. Brief information about the competition

Based on an order of the Rector of the Medical University Varna (No № P-109-119/22.03.2024), I have been appointed as a member of the Scientific Jury, and according to Protocol No. 1 I have been assigned to prepare a statement in relation to a procedure for tenure of the academic position of 'ASSOCIATE PROFESSOR' for the needs of the Department of Biochemistry, Molecular Medicine and Nutrigenomics at Medical University Varna in the area of higher education ***4. Natural sciences, mathematics, and informatics***, professional field ***4.3. Biological sciences*** and the scientific specialty of ***"Biochemistry"*** according to a competition announced in the *State Gazette No 07/23.01.2024.*

The only candidate in the competition is Deyana Georgieva Vankova, Assistant Professor in the same department. The inspection of the documents indicates that they have been prepared correctly and meet the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria and the Regulations for its application at Medical University - Varna.

2. Fulfillment of the requirements for occupying the academic position

To participate in the competition for the academic position "Associate Professor" in the scientific specialty of biochemistry, Deyana Vankova, PhD submits one dissertation work for the award of the educational and scientific degree "Doctor" (50 points from indicator A-1), one monographic (habilitation) work (100 points from indicator B-3), and a total of 19 published scientific papers which reflect the research activity of the candidate. Among them there are 14 full-text articles published in scientific journals with an impact factor referenced to and indexed in Web of Science and/or in Scopus and one book chapter in an edition also referenced to and indexed in Web of Science and in Scopus, as well as one collective monograph.

The total IF of the submitted publications, excluding the IF values of the publications related to the doctoral dissertation thesis, is 20.786 (Scopus). The total number of points based on the quartile (Q) values of the publications in which the papers were published is 255. In 6 publications (43%) the candidate is the first or second author, indicating her active role in publishing Apart from the required scientometric requirements, the candidate participated in the competition with three additional publications in English in scientific journals of the University Publishing House of the University of Medicine - Varna, in two of which she was the first and in one – a second author, as well as evidence of 9 participations in scientific forums abroad and 13 in Bulgaria. The materials

presented by Deyana Vankova for the competition are in the scientific field of the announced competition.

The citation index of the candidate is 5, according to SCOPUS (https://www.scopus.com/authid/detail.uri?authorId=55579339800) and 7, according to Google Scholar (https://scholar.google.bg/citations?hl=bg&user=oxoyO7kAAAAJ&view_op=list_works&sortby=pubdate). The presented reference shows that at the time of submission of the documents, the citations of the scientific production of the candidate by independent research groups were 27 in number, 54 points in total from indicator Д-11.

The scientific developments of Deyana Vankova characterize her as a scientist with her scientific profile, which corresponds to the thematic priorities of Medical University Varna.

The candidate has participated in 10 scientific research projects of the department, one of which is international. The candidate has scientific profiles in ORCID, Research gate, Google Scholar. She is a member of the Union of Scientists in Bulgaria (Biochemistry, Biophysics and Molecular Biology section (member of FEBS), Union of Scientists - Varna, Bulgaria, the European Nutrigenomics Organization (NuGO) and the Association of Biochemistry Departments in Bulgaria.

I accept the scientific contributions grouped as follows:

Direction 1: Research of biomarkers in socially significant diseases.

As a follow-up of the work on the candidate's dissertation on the role of genetic factors and lifestyle in the development of obesity and metabolic syndrome in a sample of the Bulgarian population, the subsequent project work is outlined: "Tissue and serum expression of Nrf2, NF-KB, HO-1, 4-HNE and their potential as biomarkers of endothelial dysfunction in an experimental model of metabolic syndrome". New data were obtained on the relationship between nuclear factor-related factor 2 (Nrf2), nuclear factor of activated B cells (NF- κB), the enzyme hemoxygenase 1 (HO-1), plasma asymmetric dimethylarginine (ADMA), and malondialdehyde (MDA) in humans with metabolic syndrome. Data on Nrf2, NF-kB, HO-1, and ADMA may potentially be developed as new biomarkers to assess endothelial dysfunction in clinical practice.

Another part of Dr. Vankova's scientific work in this scientific direction is linked to her participation in the project "Vitamin K-dependent Gla-proteins - new biomarkers for cardiovascular calcification". The main contributions relate to the possibilities of using the circulating non-carboxylated matrix Gla protein for the assessment of cardiovascular disease stages and calcium score. The hypothesis that vitamin D deficiency may be an independent cardiovascular risk factor associated with the severity of cardiovascular pathology and increased coronary calcium deposition was confirmed.

The joint activity of the candidate with a team from the National Sports Academy examines the eating habits of yoga practitioners following the recommendations of the WHO and the guidelines of the American Cancer Society for a healthy diet.

Direction 2: Investigation of the antioxidant and anti-inflammatory properties of medicinal plants and biologically active substances in vitro and in vivo

Dr. Vankova's scientific work in this direction includes various biological objects - cell cultures, experimental animals, and humans. Studies of the antioxidant and anti-inflammatory properties of medicinal plant extracts (*Sambucus ebulus L., Agrimonia eupatoria L.*) in cell cultures (mouse J774A.1 macrophage cell line and 3T3-L1 preadipocyte cell line) found that pretreatment of the cells had a corresponding cytoprotective effect and significantly decreases the expression levels of pro-inflammatory factors. A study of the antioxidant activity of medicinal plants in

experimental animals found that the administration of an aqueous extract of *A. eupatoria* improved the lipid profile (total cholesterol and triglycerides) in Wistar rats and modulated gene expression in adipose tissue.

For the first time, an intervention was conducted with healthy volunteers from the city of Varna who consumed sulfur-containing mineral waters. The curative properties of the mineral water from the Varna Basin in terms of its antioxidant and anti-inflammatory effects have been demonstrated by significantly increased levels of total glutathione and total thiols, as well as the gene expression of the antioxidant enzyme γ-glutamyl-cysteinyl ligase.

I rate Deyana Vankova's monographic work "Role of some adipokines in the pathogenesis of socially significant diseases" as a good achievement, which essentially represents a large-scale interdisciplinary study of the role of selected adipokines in the pathogenesis of some socially significant diseases, directly related to the scientific interests to the candidate and it brings her 100 points in indicator group B.

Evidence of the popularization of the results of the research work at scientific forums is attached to the applicant's documents. Information is missing for conducting expert work in connection with her qualification in biochemistry, participation in editorial boards, preparation of reviews, and others. As an administrative assistant, for two mandates, Dr. Vankova actively and devotedly engaged in a huge amount of administrative and teaching work for the benefit of the department and the university.

3. Teaching activities

Dr. Vankova is an established and experienced teacher of biochemistry and molecular biology. From the reference accompanying the application in the competition for associate professor, it is clear that Dr. Vankova has 15 years of teaching experience and 400 hours of average annual auditorium workload for the last 5 years. The candidate's teaching experience is also evidenced by her participation as a co-author in four biochemistry textbooks.

4. Conclusion

In the competition Dr. Deyana Vankova presents herself with a scientific production that characterizes her as a scientist with her profile and development in the field of the research priorities of the department, for the needs of which the competition has been announced. The candidate's scientific contributions meet the minimum scientometric requirements for holding the academic position "Associate Professor" in the area of higher education 4. Natural sciences, mathematics, and informatics, professional field 4.3. Biological sciences and scientific specialty "Biochemistry". The overall analysis of the scientific production of the candidate gives me the reason to give a positive opinion and to propose to the members of the esteemed jury to award Dr. Deyana Georgieva Vankova the academic title "Associate Professor" in the area of higher education ***4. Natural sciences, mathematics, and informatics***, professional field ***4.3. Biological sciences*** and scientific specialty "***Biochemistry***", for the needs of the Department of Biochemistry, Molecular Medicine and Nutrigenomics, Faculty of Pharmacy at the Medical University Varna.

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Prepared by:

/Prof. Diana Ivanova, D.Sc./