

To the Chairman of the Scientific Jury,
Prof. Kiril Hristozov, MD, PhD
Appointed with Order № № P-109-421/ 03.10.2025
of the Rector of the Medical University of Varna

REVIEW

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Regarding: a competition for the academic position of "Professor" in the field of higher education 7. Health and Sports, professional field 7.1. Medicine, specialty "Endocrinology" – for the Second Department of Internal Medicine, Faculty of Medicine, Medical University of Varna and the Clinic of Endocrinology and Metabolic Diseases at UMHAT "St. Marina" – Varna, announced in the State Gazette, issue No 64 of 05.08.2025

I. Information about the procedure

Based on order No. R-109-421/ 03.10.2025 of the Rector of MU - Varna and by decision of the scientific jury (Protocol No. 1/13.10.2025) I have been appointed to prepare a review as an external member of the scientific jury. The admission committee to the competition has established that the documents have been submitted within the legal deadline and are in accordance with the Law on the Development of Academic Staff in the Republic of Bulgaria (LDASRB) and the Regulations for the Development of Academic Staff at the Medical University of Varna.

Only one candidate has submitted the necessary documents to participate in the announced competition - Assoc. Prof. Mira Valentinova Siderova, MD, PhD. I have no conflict of interest in this procedure.

II. Brief biographical data and professional development

Assoc. Prof. Mira Siderova was born in 1979 in Varna. She received her secondary education at the First Language High School, studying English and German. She graduated from the Medical University of Varna in 2003 with full honors and the Rector's Golden Hippocrates Award. From 2004 to 2005, she worked at the Clinic of Anesthesiology and Intensive care of the St. Anna Hospital in Varna, and from 2006 to the present (19 years) she has been a full-time doctoral student, resident, assistant and associate professor at the Clinic of Endocrinology, St. Marina Hospital in Varna. In 2008, she completed a three-month specialization at the University Hospital in Bari, Italy, as part of the international Erasmus program. In 2011, the candidate obtained a specialty in endocrinology and metabolic diseases, and in 2013, defended her dissertation on the topic "Immunohistochemical markers and ultrasound elastography - new diagnostic options in the definition of thyroid nodules". In 2017, she became an Associate Professor in Endocrinology. From 2022 to the present, Assoc.

Prof. Siderova leads the Second Department of Internal Medicine at the Medical University of Varna, and since 2023, she has also headed the Clinic of Endocrinology at the University Hospital "St. Marina" Varna.

Assoc. Prof. Siderova has conducted a number of additional specializations in the field of thyroidology - the highly specialized activities "Ultrasound of the cervical region" and "Ultrasound-guided fine-needle aspiration biopsy of the thyroid, parathyroid glands, lymph nodes and tumor formations in the cervical region", practical courses at the European Thyroid Association in ultrasound, thyroid cytology, laser thermoablation of thyroid nodules; diabetology (Steno Diabetes Center) and bone osteodensitometry.

Assoc. Prof. Siderova is a member of the European Thyroid Association (ETA), the International Osteoporosis Federation (IOF), the Bulgarian Society of Endocrinology (BDE), the Union of Scientists - Varna and is an independent expert in scientific and ethical evaluation of projects at the European Research Council of the European Commission. She speaks English, German, Russian and Greek.

III. Scientific research activity and related contributions

Scientific works

According to the submitted reference, assoc. prof. Siderova participates in the competition with a total of 59 scientific works, as follows:

- one dissertation (thesis summary);
- 20 full text publications in journals, referenced and indexed in global databases (Scopus and Web of Science), of which 8 with an impact factor; 11 of the publications are presented as equivalent to a habilitation thesis.
- 4 scientific reports published in scientific journals, referenced and indexed in global databases (Scopus and Web of Science), of which 1 with an impact factor;
- 15 full-text publications in non-refereed journals;
- 17 scientific reports published in non-refereed journals;
- 1 published chapter of a collective monograph;
- 1 university textbook co-authored.

In 17 of the mentioned publications, assoc. prof. Siderova is the first author and all except the dissertation were realized after her habilitation in 2017. A large part of the publications are in prestigious international and Bulgarian journals (Archives of endocrinology and metabolism, Acta Endocrinol (Bucharest), Nuclear Medicine Review, Pharmacia, Acta Medica Bulgarica, General Medicine, Journal of IMAB, Endocrinologia, Advances in Health and Disease- Nova Science Publisher Inc, New York, etc.).

Scientific activity also includes over 20 participations in prestigious international and national congresses and conferences after her habilitation. Assoc. Prof. Siderova is participates in one project at MU-Varna as a leader of the project

Profile of scientific work and scientific contributions

The main scientific interests of assoc. prof. Siderova are focused on the following thematic areas:

- **Thyroid pathology**

Publications A1, B 4.1, B 4.4, Γ 7.1, Γ 7.10, Γ 8.22, Γ 9 consider goiter and malignant thyroid nodules as the central subject of the candidate's scientific research, with a focus on the diagnosis, treatment and follow-up of malignant thyroid lesions. Modern views on the sonographic evaluation of thyroid nodules, the differentiation of benign nodules, which can be managed conservatively, from those with suspicious or malignant characteristics, requiring further clarification and treatment, including fine-needle biopsy, some complementary molecular techniques and surgical treatment are covered. Since over 90% of malignant thyroid nodules are differentiated thyroid carcinoma (DTC) with a good prognosis, the main emphasis is on establishing strict criteria for diagnosis, treatment and follow-up in order to minimize the potential harm from overtreatment of low-risk patients and to ensure adequate therapy for high-risk patients. Some of assoc. prof. Siderova's publications report rare thyroid tumors such as thyroid lymphoma, a familial variant of medullary carcinoma, as well as cases of thyroid metastases from tongue carcinoma and ovarian cancer, having both scientific-practical and applied-educational contributions.

Another subject of Assoc. Prof. Siderova's scientific research is Graves' orbitopathy, also known as thyroid-associated ophthalmopathy (TAO). Publication B 4.5 examines the pathogenesis, activity and severity assessment of TAO, as well as new therapeutic approaches beyond standard steroid immunosuppression. Publication B 4.11 examines the relationship between autoimmune hyperthyroidism and osteoporosis. A study in women with Graves' disease (with and without TAO) shows that patients with TAO have higher bone density, with a positive correlation observed between TSH-receptor antibodies and bone mineral density. This study has also been included in meta-analyses by other author groups. Other review studies (B 4.9 and B 4.10) examine the skeletal effects of thyroid dysfunction - in hyper- and hypothyroidism, respectively.

Assoc. Prof. Siderova has also studied autoimmune thyroid diseases in the context of metabolic and psychological consequences (publications Γ7.12 and Γ7.13). A study with over 700 participants found that elevated TSH in autoimmune thyroiditis is associated with increased levels of triglycerides and LDL-cholesterol, as well as with higher cardiovascular risk. The relationship between hypothyroidism and depression has also been studied, with the results emphasizing the need for psychiatric screening in these patients, even with hormonal treatment. Publications Γ 7.4, Γ 8.16, Γ 8.27 and Γ 8.23 address another current problem - thyroid dysfunction induced by immune checkpoint inhibitors and after stem cell transplantation. The need for an individual approach in the diagnosis and treatment of these emerging forms of thyroid damage is emphasized.

• **Sarcopenia in endocrine diseases – thyrotoxicosis, drug-induced hypogonadism in androgen deprivation therapy**

Several publications (Γ 7.8, Γ 8.8, Γ 8.9, Γ 8.10, Γ 8.21) draw attention to hyperthyroidism as a possible factor for earlier development of secondary sarcopenia. In these studies, Siderova et al. analyzed body composition, muscle strength and physical function (grip strength and walking speed), and a relationship was established between reduced TSH and deteriorated muscle performance. For the first time in Bulgaria, a comprehensive assessment of muscle health was made in women with newly diagnosed hyperthyroidism, with an emphasis on the ASMI index and the functional state of the muscles. The contributions are scientific and

practical, with an emphasis on the importance of measuring hand grip strength as a reliable, easily applicable and informative method that can be implemented in the routine clinical assessment of thyrotoxic patients.

Another endocrine pathology among men – drug-induced hypogonadism due to androgen deprivation therapy (ADT) for prostate cancer is the subject of scientific research in publications Γ 7.2, Γ 7.11, Γ 8.3, Γ 8.28. The main focuses of the studies are the increased fracture risk and osteosarcopenia. With an innovative design and undoubted contribution is publication Γ 7.2, dedicated to sarcopenia in men with prostate cancer undergoing ADT. Along with the SARC-F questionnaire and hand grip strength assessment, the skeletal muscle index (SMI) was also measured using [68Ga]Ga-PSMA-11 PET/CT imaging, performed within the framework of oncological staging.

• Pathology of the parathyroid glands

Hyperparathyroidism in its various forms – primary, secondary and tertiary – represents a serious challenge in endocrinology practice due to its complex diagnosis, diverse clinical manifestations and potential complications. Although asymptomatic forms of **primary** hyperparathyroidism dominate in modern times, publication B 4.3 presents a case with severe disabling bone deformities and brown tumors. The publication with an applied and educational contribution is accompanied by extensive photographic material and emphasizes the importance of bone symptoms as the first, although sometimes non-specific manifestation of the disease.

Another group of publications focuses on **secondary** hyperparathyroidism (SHPT) - data from a joint study with a dialysis clinic and assessment of serum levels of biomarkers bone-specific alkaline phosphatase, osteocalcin and vitamin D in two groups of patients - on hemodialysis and those with CKD stage 2/3 with SHPT, as well as ultrasound detection of hyperplastic parathyroid glands in SHPT (publications Γ 8.20, Γ 8.30 and Γ 8.32). The rich clinical experience is presented and the diagnostic accuracy of ultrasound for the detection of secondary hyperparathyroidism among a cohort of hemodialysis patients is assessed. Valuable for clinical practice is the determination of the PTH level above which hyperplasia of the parathyroid glands is visualized among these patients. The wider integration of ultrasound in the diagnosis and treatment of SHPT will enrich and possibly modify clinical, pharmacological and surgical strategies for its management. Publication Γ 7.7 presents **tertiary** hyperparathyroidism (THPT) that developed as a result of long-standing secondary one in end-stage chronic renal failure due to autosomal dominant polycystic kidney disease. The study highlights the complexity of the treatment of THPT in end-stage CKD and the limitations of nonsurgical treatment to achieve biochemical control.

• Diabetes mellitus - modern treatment approaches, new therapeutic methods in the treatment of diabetic neuropathy

A group of scientific publications (Γ 7.6, Γ 8.1, Γ 8.2, Γ 8.14, Γ 8.15) are dedicated to the new classes of glucose-lowering drugs - GLP-1 receptor agonists and SGLT2 inhibitors, which change the therapeutic approach in type 2 diabetes mellitus, cardiovascular diseases (CVD) and chronic kidney disease (CKD). Challenges in clinical practice are considered, as well as the real application of these organ-protective drugs among diabetic patients in a university

center for a period of one year (publication Г 7.6). The studies demonstrate progress in the implementation of international recommendations in real clinical practice. Publication B 4.7 examines the possible relationship between type 2 diabetes mellitus and increased cancer risk, emphasizing the potential antitumor benefits of metformin. A co-authored publication (Г 8.25) presenting real clinical data on the effect of switching from insulin pen to pump therapy in patients with type 1 diabetes mellitus is of scientific and applied value. Assoc. Prof. Siderova is the editor of the book "Type 2 Diabetes – from pathophysiology to modern treatment", IntechOpen, 2019 with pronounced educational and scientific value. Some of Siderova's publications are dedicated to diabetic sensorimotor neuropathy, covering pathogenesis, therapeutic approaches and innovative non-pharmacological interventions. Studies dedicated to high-energy MLS-laser therapy in diabetic neuropathy with their own data from joint studies with physiotherapy specialists (Г 7.5, Г 7.9) are of significant scientific and practical contribution.

• Metabolic disorders in adrenal and gonadal pathology

The relationship between hormone-non-secreting adrenal incidentalomas and metabolic syndrome has been studied (publications B 4.6, Г 8.6, Г 8.13), as well as metabolic lipid and carbohydrate disorders in drug-induced hypogonadism in men as a result of androgen-deprivation therapy for prostate cancer (publications B 4.2, Г 8.17, Г 8.28).

• Rare endocrine diseases – challenges in clinical practice

Some of the publications in this area are dedicated to the description of specific clinical cases that are of both practical and theoretical interest - a clinical case of spontaneous resolution of acromegaly; TSH – producing pituitary adenoma; Thyroid hormone resistance syndrome with the impressive co-authorship of prof. Refetoff; An innovative treatment approach reported in the treatment of a patient with hypercortisolism by adrenal superselective arterial embolization. Collaboration with a pediatric endocrinology clinic is highlighted in study Г 8.26, dedicated to the reassessment of growth hormone treatment in the transitional age (10 patients), as well as a case of a parathyroid cyst in a girl – a rare pathology in the pediatric population.

IV. Citations of the candidate's publications

The provided official report shows that the citations of the candidate's scientific works after habilitation amount to 345 points, with 12 articles cited. The citations are mainly in international scientific publications, referenced and indexed in world-renowned databases, which is an indicator of the scientific value of assoc. prof. Siderova's publications.

V. Teaching activities

The teaching activities of assoc. prof. Siderova date back to 2008 as a part-time assistant, then from 2015 as an assistant, and from 2017 as an associate professor and include:

- Training of students in the Bulgarian and English-language programs in the form of practice seminars and lectures; training of pregraduate intern doctors, pharmacy students.
- Postgraduate training of specialist doctors and PhD students;
- Training in the high specialized procedures for specialist endocrinologists;

- Participation as a lecturer in a number of national scientific forums;
- Participation in state and semester examination committees of students in "Internal Medicine", exams for enrollment in specialization in Endocrinology and conducting colloquiums of specialists in Endocrinology.

She has been a member of the state examination committees in Endocrinology and Metabolic Diseases since 2021 and chairman since 2024.

The total teaching workload of assoc. prof. Siderova for the last 4 academic years equals to 832 hours (average 208 hours/year with a required minimum of 100 hours/year). Assoc. Prof. Siderova has been the head of the specialization in Endocrinology and Metabolic Diseases for a total of 8 doctors, 5 of whom have successfully acquired a specialty and three are still in training.

She is the scientific research supervisor of 6 doctoral students, 3 of whom have successfully defended their PhD dissertations.

VI. Diagnostic and therapeutic activities

Assoc. prof. Mira Siderova is an established specialist in the field of endocrinology, having gained experience both at the University Hospital "St. Marina" and through participation in qualification courses and specializations in prestigious international centers. Her striving for continuous professional development and improvement is confirmed by her participation in a number of scientific conferences and practical seminars in the field of endocrinology. Assoc. Prof. Siderova regularly participates in multidisciplinary teams and specialized committees engaged in the complex diagnostics and treatment of patients with endocrine diseases (Committee "Endocrine Tumors" at the University Hospital St. Marina), she is also a member of specialized committees for prescribing expensive medications and medical devices reimbursed by the National Health Insurance Fund for the treatment of patients with type 1 and 2 diabetes mellitus, growth hormone deficiency, hyperprolactinemia, acromegaly, disorders in calcium-phosphorus metabolism.

VII. Compliance with the minimum national scientometric requirements for AD "professor", as well as the requirements of MU-Varna:

The fulfillment of the minimum national requirements for the academic title "professor", according to the regulations of Medical University of Varna, by groups of indicators is as follows:

- Group A Dissertation thesis - fulfilled - 50 points;
- Group B Not required for Academic position "professor";
- Group B Publications equivalent to habilitation work (minimum 10) in referenced and indexed in world databases with scientific information - 11 issues - fulfilled - 295 points, with a requirement of minimum 100 points.
- Group Г Fulfilled: available total number of points 647.61, with a mandatory minimum of 200 points (respectively for Г 7 - 224 points, for Г 8 - 403.61 points; for Г 9 - 20 points);
- Group Д Citations - Completed: available number of points - 345, with a required minimum of 100 points.

- Group E Completed: 171.53 points collected, with a minimum number according to the requirements - 100 points (according to E 14 Guide to successfully defended doctoral students - 100 points with a minimum requirement of 80 points).

The total sum of the scientometric indicators of the candidate Assoc. Prof. Mira Siderova is 1509 points and exceeds 3 times the requirements of 550 points for occupying the title of "professor".

VII. Conclusion

Considering the comprehensive career development of Assoc. Prof. Mira Siderova, I believe that in addition to being a skilled specialist in the field of highly specialized activities in endocrinology, she has diverse and extensive scientific activity with significant contributions in the relevant fields. Assoc. Prof. Siderova is an established lecturer and head of units such as the Department and Clinic, which gives her the opportunity to build new specialists and young scientists with her experience. I believe that she meets the qualitative and quantitative criteria for occupying the academic position of "Professor", set out in the LDASRB, the Regulations for its implementation and the Regulations for the terms and procedures for acquiring scientific degrees and occupying academic positions at Medical University of Varna. Based on this, I give my **positive** vote and propose to the members of the scientific jury to award Assoc. Prof. Mira Valentinova Siderova, MD, PhD the academic position of "Professor" in the specialty "Endocrinology", at the Second Department of Internal Medicine, Faculty of Medicine of MU-Varna and the Clinic of Endocrinology and Metabolic Diseases at the University Hospital "St. Marina" Varna.

25.10.2025 г.

Reviewer:

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