



## OPINION

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"PROF. Dr. ASEN ZLATAROV" Burgas**

### INTERNAL MEMBER OF A SCIENTIFIC JURY

**Subject:** Conducting a competition for filling the academic position

"Professor" in the scientific specialty "Pathology and cytopathology", in the field of higher education 7. Health and sports, professional direction 7.1. "Medicine", announced in the Official Gazette, issue 13 /13.02. 2024

One candidate submitted documents for the competition, Prof. Dr. Maya Vladova Galabova, MD.

The opinion was drawn up in accordance with the requirements of the RSARB and the Regulations for the terms and conditions for acquiring scientific degrees and holding academic positions at the University "Prof. Dr. Asen Zlatarov" - Burgas.

#### **I. Biographical data**

Professor Dr. Maya Galabova graduated from higher education in 1983. in the Medical Academy of Sofia, specialty "Medicine". In 1984, he began teaching as an "assistant" in the Department of General and Clinical Pathology at VMI - Stara Zagora. In the period 1993-2002, he held the position of "principal assistant" at the Faculty of Medicine of Thrace University, then the position of associate professor, and in 2013 he held the position of professor. In 1989, he specialized in liver pathology at the I Moscow Medical Institute "I. Sechenov In 1999, he obtained a doctorate in medicine on the topic "Role of sinusoidal cells and pit cells in the liver". Professor Maya Galabova has extensive administrative experience. covering the period 2004-2024, in her capacity as head of the department of general and clinical pathology, forensic medicine and deontology and dermatovenerology (2003-2023), deputy dean for research at the Ministry of Health (2004-2007), dean of the Ministry of Health (2007- 2019) at the Thrace University, and current Head of the General and Clinical Pathology Clinic at the UMBAL "Prof. Dr. Stoyan Kirkovich".

The candidate's research activity is developed in several main directions, which fully correspond to the field of higher education 7. Health and sport", professional direction 7.1. "Medicine", scientific specialty "Pathology and cytopathology":

- Colorectal, rectal, gastric, endometrial, lung and thyroid carcinoma, with an emphasis on cytokines and immune cells - myeloid and plasmacytoid dendritic cells, T-helpers, NK and NKT cells using precise and modern methods.

- Liver pathology including hepatocellular carcinoma, liver metastases, hepatic sinusoids, biliary tract pathology, peliosis, integrins, adhesion molecules, extracellular matrix.

- Tertiary lymphoid structures induced by tumor, infectious agents and autoimmune processes.

- Experimental diabetes, focusing on insulin-producing cells in bile ducts, pancreatic duct and liver.

Prof. Dr. Galabova participated in the guidance and training of 22 doctoral students. He also participates in the training of specialists in the clinical specialty "General and Clinical Pathology". She won 4 research projects at the Ministry of Education and Culture for the Ministry of Education, corresponding to the scientific specialty "Pathology and cytopathology".

The scientific output and results have been published in renowned international journals.

## **II. Description of the submitted materials for the competition**

Prof. Dr. Galabova participated in the competition with 21 articles in prestigious international and Bulgarian refereed journals, of which 18 have an impact factor (IF= 22.385, and the total IF of all publications, from 1984 to today, is 106.006) and 2 with impact rank, quartiles: 2 with Q1, 4 with Q2, 13 with Q3, 1 with Q4. The extremely high H-index = 21 is an important indicator of the significance of her scientific output. The candidate's personal contribution to scientific research is highlighted by his participation in 10 publications where he is the lead author, in 4 publications he is in second place, in 1 in third place, and in the rest in fourth and subsequent places. A list of 32 citations in foreign specialized journals is attached. The total number of citations at the moment - 1621 reflected in the SCOPUS database - is impressive.

He participated in the implementation of 10 research projects corresponding to the scientific specialty "Pathology and cytopathology", 9 of which he was the leader of.

Evaluation of the candidate's scientific works

Prof. Dr. Galabova has attached a very well-prepared detailed report on the contributions from the scientific works, which accurately reflects her achievements in the individual scientific fields of important practical importance. The main scientific contributions of the candidate are related to:

### **I. Studies of bile ducts:**

These include routine electron microscopy of endocrine cells and mast cells, light and electron microscopic immunohistochemistry in patients with extrahepatic cholestasis. The established tryptase, chymase VIP and SP immunopositive mast cells, adjacent to NSE positive nerve fibers and serotonin positive endocrine cells in the lower part of the common bile duct give reason to assume that they are involved in the regulation of motility, bile evacuation and hormonal secretion in the gastrointestinal tract. It has been established that in acute cholangitis, the tight adhesion of inflammatory cells to the vascular endothelium is mediated by adhesion molecules ICAM-1/LFA-

1 and ICAM-1/Mac-1, ensuring the migration of primarily neutrophils to the focus of inflammation.

Another part of the research is related to liver studies of extrahepatic cholestasis. The deposition of type III and type IV collagen in sinusoids and portal spaces in livers of patients with extrahepatic cholestasis was studied by light microscopy and ultrastructural immunohistochemistry. Studies on liver sinusoids around metastatic and primary tumors by light and electron microscopic immunohistochemistry and flow cytometry.

Examination of mast cells in the liver around and in metastases showed increased numbers of these cells in extratumoral tissue, around liver metastases and in the metastases themselves compared to control liver tissue. For the first time, electron microscopic differentiation was made between the granules of tryptase positive and chymase positive mast cells. The established changes in the sinusoids in the presence of liver metastases from various gastrointestinal tumors are an original contribution. Studies on extracellular matrix proteins and their integrin receptors show increased expression of tenascin and  $\alpha 9\beta 1$  integrin, which are markers of perisinusoidal fibrosis and sinusoidal transformation.

#### 2. Immunohistochemical and genetic studies in colorectal carcinoma.

Immunohistochemical expression of GST-p in tumor tissue in primary colorectal carcinoma showed that when it was elevated, patients had shorter survival and resulted in reduced efficacy of antitumor therapy. Studies were conducted to determine the genetic polymorphisms of the genes encoding the protein expression of GST-p. Other studies have identified microsatellite instability in colorectal carcinoma. Endocrine cells and enzymes involved in antioxidant defense against free radicals GST-p, SOD1, SOD2, and the cytokine VEGF in tumor tissue in primary colorectal carcinoma were investigated. In survival analyses, carcinomas containing endocrine cells have been shown to have a worse prognosis. An original contribution was the expression of enzymes involved in the antioxidant defense of GST-p SOD1 and SOD2 in endocrine colorectal carcinoma cells.

#### 3. Studies of pathological processes in the uterus, prostate and bladder.

They can be divided into: studies on hypertrophy and carcinoma of the prostate gland, clinical and immunohistochemical studies on preneoplastic lesions of the cervix. On biopsy, it was found that HPV infection was most often associated histologically with flat papilloma, inverted papilloma, and exophytic papilloma.

#### 4. Immunohistochemical studies in gastric carcinoma.

They allow the distribution of immature (CD1a+ and S100+) and mature (CD 83+) dendritic cells to be determined.

#### 5. Immunohistochemical studies in thyroid carcinoma.

The involvement of the Th2 cytokine TGF- $\beta 1$  and molecules from the TGF- $\beta 1$  signaling pathway Smad4, Smad7, TGF- $\beta$  RII as well as dendritic cells in the tumor tissue of primary thyroid carcinomas was studied.

The teaching activity of Prof. Dr. Galabova includes conducting a significant number of hours of exercises and lectures for the period 1984-2024, in the following disciplines:

• "General and clinical pathology", for students majoring in "Medicine" from the 3rd and 4th year.

• "Somatopathology and oncopathology" of second-year students, majoring in "Social activities" - full-time and extramural studies.

• "Clinical Pathology" of first-year students, specialty "Nurse" and specialty "Midwife"

Prof. Galabova has a total teaching experience of 39 years, and her total annual workload varies from 360 to 480 hours.

The analysis of the teaching and research activity shows that the candidate has fulfilled the required criteria for occupying the academic position of "professor", laid down in the Regulations for the terms and conditions for acquiring scientific degrees and for occupying academic positions at the University "Prof. Dr. Asen Zlatarov" - Burgas, which are included in a group of indicators A, B, D, D and E. It is important to note that the points of the indicators for groups D and E significantly exceed the minimum required points.

### **III. Critical notes and recommendations**

I have no comments on the presented scientific works and materials.

### **IV. Conclusion**

Examining the materials of a professor. Dr. Maya Galabova, presented for participation in a competition for the academic position of "professor" in the field of higher education 7. Health care and sports, professional direction 7.1. "Medicine" for the needs of the Department of "Anatomy, Histology and Embryology, Pathology, Forensic Medicine and Deontology" at the Faculty of Medicine, University "Prof. Dr. Asen Zlatarov" - Burgas, shows that the normative requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Rules for its Implementation and the Rules for the Development of the Academic Staff of the University "Prof. Dr. Asen Zlatarov" – Burgas. The candidate presents much more than is required in terms of volume, and original scientific and applied contributions are found in the scientific works themselves.

In conclusion, I confidently give my positive assessment to Prof. Dr. Maya Vladova Galabova and recommend to the members of the esteemed Scientific Jury to support her choice for the academic position of "Professor" in the scientific specialty "Pathology and Cytopathology", in the field of higher education area of higher education 7. Health care and sports", professional direction 7.1. "Medicine" to the Department of "Anatomy, Histology and Embryology, Pathology, Forensic Medicine and Deontology", MF, University "Prof. Dr. Asen Zlatarov".

**Prepared the opinion:**

**20.06.2024**

**/prof. Vladimir Gonchev, MD, PhD/**