HABILITATION THESIS

Translational research in clinical practice - Unravelling the complex molecular profile in hematological malignancies, nutritional, cardiovascular and endocrine diseases

Bănescu Claudia Violeta, MD, PhD

University of Medicine and Pharmacy Tîrgu Mureș

The present Habilitation thesis presents a part of my research activity after I sustained the PhD Thesis at the University of Medicine and Pharmacy Tîrgu Mureş in December 2009 and confirmed by The Ministry of Education, Research and Innovation, Order no. 3492 from 3.03.2010.

The selected activity was considered to be relevant in terms of originality and importance, in order to anticipate an independent development of the further research and academic/teaching career.

The activity research presented in this thesis is sustained by the 17 publications in the list selected to be relevant for the professional achievements after I obtained her PhD title and was conducted on the following topics: hematology (Genetic studies in malignant hematology disorders), pediatrics (renal disease in children, gene polymorphisms in nutritional disorders), genetics of congenital heart disease and cardiovascular diseases in children, genetic causes of endocrinology disorders and neurology (single nucleotide polymorphisms in peripheral polyneuropathy) and represent my scientific work done during the last 5 years.

The activity research presented in this thesis regarding the "Genetic studies in malignant hematology disorders" topic is sustained by 8 publications in the list with relevant publications. The relevance of the scientific activity and the recognition of the national and international activity in this field is emphasised by the publications in famous journals, mostly in cooperation with national researchers (Bănescu C et al. Leuk Lymphoma. 2014b; Bănescu C et al. Leuk Lymphoma. 2014a; Bănescu C, et al. Gene. 2013; Bănescu C, et al. Biomed Res Int. 2014; Trifa AP et al Leuk Lymphoma. 2012; Trifa AP et al. Br J Haematol. 2014, Bănescu C, et al. Oxid Med Cell Longev 2014, Bănescu C, et al. Tumour Biol. 2014).

The scientific activity in the field "Malignant hematology disorders" is sustained by the involvement in European COST project (COST 8M0902) dealing with the myleproliferative disorders (MPD) and in different national and local projects (CIGCS-CC 19/11.12.2013; CIGCS 2/30.01.2013).

The recognition of the activity in the field of Hematology, is proved by the citations of the published articles in ISI journals and by invitation as a reviewer from prestigious journals, as follow: Leukemia and Lymphoma; Tumor Biology; Cancer Biomarkers, Scientific Reports, Chromosoma.

The research of the genetics factors such as investigation of single nucleotide polymorphisms (SNPs) in children with congenital hearts defect and cardiovascular diseases was another activity, described in section D. Part of this activity is sustained by the 3 publications from the list selected to be relevant for the professional achievements (Togănel R et al. Experimental & Clinical Cardiology 2014, Togănel R et al. *Rev Romana Med Lab*. 2013; Togănel R et al. *Rev Romana Med Lab*. 2010) and by a national

project (Translation of genomic research concerning the etiology of congenital heart defects in innovative screening methods, prenatal prevention, genetic diagnosis and three-dimensional imagistics" MAMI, no 41-042/2007, PNCD II, 2007-2010).

Another direction of research was in the field of nutritional disorders in children, such as obesity and malnutrition. My scientific work done and dealing with nutritional disorders is represented by articles published in national and international journals with Impact factor (Mărginean OC et al. Eur J Pediatr. 2014; Mărginean CO, et al. J Pediatr Gastroenterol Nutr. 2014; Mărginean O et al, EJON 2014).

Another topic of research is represented by renal disease. Part of this activity is sustained by the some publications selected by the candidate (Duicu et al, *Rev Romana Med Lab*. 2013) and some local projects of our University (Identification of chromosomal abnormalities with prognostic value in renal carcinoma- CIGS 2013).

Another theme of research was linked to the Endocrinology. My scientific work performed and dealing with this theme is represented by three articles published in national journals with impact factor (Gliga F et al, *Rev Romana Med Lab*. 2012; Pascanu I et al. Acta Endo (Buc) 2010; Paşcanu I et al. Acta Endo (Buc), 2009).

The candidate participated to one major grant and some local grants in which the Genetic Laboratory from Genetic Department of the University was substantially transformed by acquisition of new equipment (as member or director of the project).

I am memeber of the Editorial Commitee of Romanian Review of Laboratory Medicine, indexed in the ISI Web of Knowledge - Web of Science - Science Citation Index Expanded.

In educational area, I was Teaching Assistant (2001-2005), Assistant Professor (2005-2019), Senior Lecturer (2019-2014) and Associate Professor (2014-present). All along the years, we elaborated with our students and PhD students several scientific papers presented at Conferences and they became part of our research team. We elaborated books for the students for both practical laboratories and courses. During my practical work with students and my course I preferred student-centered teaching methods.

As a physician, I am working in field of Medical genetics, being Primary Physician in Medical Genetics.

The most recent and thus the most important for the immediate future and also for long-term plans, is a recent huge project entitled **Advanced Centre for Medical and Pharmaceutical Research (Centru avansat de cercetări medicale şi farmaceutice - CCAMF)** won by The University of Medicine and Pharmacy of Tîrgu Mureş, POS CCE O2.2.1. Grant amount is 10.4 million euro and it will allow the construction of a medical research and will include: laboratory of immunology, chromatography and mass spectrometry analyses, cytology, molecular biology, genetics/genomics and functional explorations laboratories, plasma and DNA bank. I am member of the scientific team of this project.

All my scientific, professional and academic future development plans deal with the thematic directions represented by malignant hematology and nutritional disorders but also with cardiovascular and cerebrovascular disease.