

## Summary

The habilitation thesis named **“Perfecting the diagnostic and therapy methods in cardiac pathologies”** includes the results of my academic, scientific and journalistic activities in the fields of internal medicine and veterinary cardiology, and it contains the most relevant personal achievements in veterinary medicine scientific research, from 2011, after defending my thesis to the present time.

According to the Doctoral School of Veterinary Medicine within USAMV Cluj-Napoca, the habilitation thesis is structured in three parts.

The first part covers information about my professional and academic training, the second part presents the main research directions that form the basis of the thesis, while the last part is about projecting a personal plan on scientific, professional and academic development.

The first part of the habilitation thesis includes my professional training, as well as educational and scientific achievements.

Between the years 2003-2021, the academic activity has been performed exclusively at the University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, as part of the Internal Medicine department. I supported and managed to implement the discipline of Veterinary Cardiology as an independent subject in the Faculty of Veterinary Medicine of Cluj-Napoca (2016). In addition to the teaching and research activity performed within the discipline mentioned before, I benefited from a series of scholarships and teaching courses that took place at prestigious clinics or universities. Among them, I would like to mention: Koret School of Veterinary Medicine, Faculty of Agriculture, Food and Environmental Quality Sciences, Hebrew University of Jerusalem, Justus-Liebig University, Giessen, VetSuisse, Zurich, Extremadura University, Caceres. I am also a graduate of European School of Advanced Veterinary Studies (ESAVS) Cardiology II-V courses (Luxembourg and Novara). Starting with 2020, I am registered in a Certification program in the Veterinary Cardiology domain at the European School of Advanced Veterinary Studies (Luxembourg).

Starting with 2021, I am enrolled in an alternative residency program, regarding canine and feline cardiology, at VetSuisse, Zurich, under the coordination of Prof. Dr. Tony Glaus.

I have been involved in several research projects as leader (3) or as a member of research teams (7). The results of these projects have been materialized by the publication of 9 scientific articles in ISI journals, proceedings published in ISI indexed journals (11), in journals indexed in international databases (over 50) (Cluj-Napoca, Iasi, Timisoara) or in ISI listed and indexed conference volumes (Spain, Australia, Denmark). I am an active member of international and national scientific professional organizations. Also, I am a scientific reviewer for specialized journals.

The publishing activity, realized after defending my doctorate thesis, regarding didactic and scientific publications, can be quantified as follows: 2 scientific books, 2 didactic manuals and a practical guide.

The second part of the habilitation thesis includes the outcome of a part of my researching activity, published after defending the PhD thesis, and is structured in three directions.

Chapter 2.1 of the second part is called *Contributions to the study of congenital heart diseases* and it has 3 subchapters. In the first subchapter, *Introduction*, is provided a description of the prevalence of the main types of congenital heart diseases in dogs and cats, while in the subchapter *Materials and Methods* I described thoroughly the methods of investigation (clinical and paraclinical) that have to be performed in order to establish a correct and complete diagnostic for the patients that suffer from a congenital heart disease. In the subchapter *Results and Discussion*, I have provided a detailed description of the studies accomplished concerning congenital heart pathologies of dogs and cats.

Chapter 2.2 of this part is under the name of *Contributions regarding the pathology of the pericardium and cardiac tumors* and it has 2 subchapters, *Materials and Methods* and *Results and Discussion*. In the first part of the chapter, I presented the description of the morphology and physiology of the pericardium, while in the subchapter *Materials and Methods* I illustrated the manner of examination for patients with suspicion of pericardial affection/cardiac tumor. In the subchapter *Results and Discussion*, I presented two studies fulfilled on patients that have shown pericardial affection/cardiac neoplasia. In the context of these studies, I highlighted the clinical, ECG and ultrasound changes associated with pericardial pathology or in case of the existence of a cardiac tumorous proliferation. Another important objective in our research was to identify the etiology with the highest prevalence causing pericardial effusion.

Chapter 2.3 is entitled *The Evaluation of the effectiveness of some polysaccharides in the therapy of heart failure in an experimental model*. This chapter consists of three subchapters: *Introduction, Materials and Methods* and *Discussions*. In this study we evaluated the efficiency of a goji berry extract, which contains a complex of polysaccharides, in the improvement of functional cardiac parameters in Wistar rats with induced heart failure. The induction of heart failure in rats was done through an experimental protocol that is similar to the changes of heart structure associated with hypertension in humans. Furthermore, we observed the capacity of the goji extract to influence the values of certain markers of oxidative stress, as well as the level of certain pro-inflammatory cytokines.

The third part of the habilitation thesis follows the projection of my academic, scientific and professional career development plan.

I would like to build a university career through which the visibility and reputation of the Faculty of Veterinary Medicine of Cluj-Napoca is increased. I aim to further develop my professional level and create a strong veterinary cardiology center in Cluj-Napoca. Regarding the researching activity, it will be focused on topics associated with cardiac pathology. I want to get involved in fundamental research topics, connected with the identification of new molecules that could be used in heart failure therapy or with the finding of certain markers that provide a prediction on the evolution of patients with heart disease.