

University of Medicine and Pharmacy  
“CAROL DAVILA” Bucharest  
Faculty of Medicine



HABILITATION THESIS

The molecular pattern of tumor relapse and resistance to  
treatment in patients diagnosed with cancer

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## **1. Foreword**

The habilitation thesis entitled “The molecular pattern of tumor relapse and resistance to treatment in patients diagnosed with cancer” is structured into three sections, in accordance with the CNATDCU Romania recommendations and the national legislation in force.

Section I presents the synthesis of my professional, academic, scientific and research activity, including the stages of my career development and the most important papers published or presented at national and, especially, international congresses, conferences and symposiums, of the chapters in treaties and monographs published at international and Romanian publishing houses, of the awards obtained as a reward for this activity and, last but not least, the research work through the development of several grants and clinical trials.

I defended my PhD thesis in 2018, at the University of Medicine and Pharmacy “Carol Davila” Bucharest, thesis entitled “THE DETERMINATION OF IMMUNOLOGICAL FACTORS IMPACTING THE PROGNOSIS AND RESISTANCE TO TREATMENT IN BREAST CANCER”, having Professor Rodica Anghel, PhD. as scientific coordinator.

The research activity I developed during the doctoral studies, along with my previous professional training and my medical, professional, research, scientific and subsequent editorial concerns, have created the bases of this habilitation thesis.

The publishing and editorial activity is visible through the publication of a chapter in a national treaty that brings together well-known names in oncology, of 38 articles indexed in Web of Science, of a significant number of articles indexed in international databases (BDI), as well as through the active participation as invited speaker at national and international scientific events. All these will be presented in the present habilitation thesis.

The professional activity was developed through permanent and continuous participation in numerous courses of specialization and overspecialization in oncology. All these professional training and continuing medical education activities were carried out under the aegis of institutions of a high medical prestige in Romania, having as program coordinators outstanding personalities in oncology.

Section II is dedicated to projects of scientific development and to the university career, based on both my academic, scientific and professional experience, and on the opportunities offered by the collaboration with renowned clinics and centers in the field of oncology.

Section III outlines the most recent and important bibliographic references, which I have used in the elaboration and presentation of this thesis.

## 2. Summary

### **Professional and university activity**

I am a graduate of the Faculty of General Medicine of the University of Medicine and Pharmacy “Carol Davila” Bucharest, in 2010, defending the bachelor thesis entitled “The surgical treatment of solitary contralateral adrenal metastases coming from renal carcinoma”, under the scientific coordination of Professor Ioanel Sinescu. I was admitted through the national residency contest in 2012 in the Oncology specialty, being confirmed as an oncology specialist in 2018.

My debut in the university career was in 2017 as an Assistant Professor, within the Oncology Discipline of the “Alexandru Trestioreanu” Oncological Institute of Bucharest. In October 2019 I became a Lecturer and in 2023 I became an Associate Professor within the same discipline.

Throughout my career I have permanently attended numerous national and international congresses, both as invited speaker, and as presenter of oral or poster presentations.

I am a member of many national and international professional scientific societies such as ESMO, ASCO.

I am also part of the editorial board of specialized journals and I am peer reviewer of specialized journals, performing over 20 peer-reviews for journals indexed in the Web of Science database.

I have published as author/co-author over 38 articles indexed in Web of Science and numerous articles indexed in international databases (BDI) (*IndexCopernicus, Genamics JournalSeek, EBSCO, ProQuest, Embase, Scopus, Ulrich, Scipio, Genamics, Ulrich's Periodicals Directory, ProQuest, DOAJ, MPRA, IDEAS, EconPapers, Socionet, HeinOnline, Google Academic, Citefactor, JournalIndex, ErihPlus, Impact Factor Journal, GetInfo, Yas Citation Index, ROAD, DAJI, Universal Impact Factor (UIFACTOR), CiteFactor, Journal Guide, Trueserials, ZBMED, Asia Education Index, Quality Open Access Market, Eurasian Scientific Journal Index, AE Global Index, Open Access Articles, Scientific Indexin Services (SIS), Quality Factor*).

I was involved in research projects/clinical trials, each addressing, to varying degrees, the topic of the proposed thesis; two of these POSDRU/159/1.5/S/135760 CERO – CAREER PROFILE: ROMANIAN RESEARCHER “Support for PhD students and postdoctoral

researchers” and POSDRU 186/3.2/S/155295 “Development of competences in transplantation”.

I was Project Manager, corresponding to University of Medicine and Pharmacy “Carol Davila” Bucharest, for 4 projects with international academic partners, entitled:

- “Monitoring Tumor Epigenetic and Copy Number Alteration Dynamics during HER Targeting Agent Treatment using a blood test, a Pilot Study Summary in Romanian”, NATIONAL RECOVERY AND RESILIENCE PLAN COMPONENT 9 - Support for the private sector, research, development and innovation, INVESTMENT 8 - Development of a program for attracting highly specialized human resources from abroad in research, development and innovation activities. CALL FOR PROJECTS: PNRR-III-C9-2022-I8, APPLICANT: CAROL DAVILA UNIVERSITY OF MEDICINE AND PHARMACY.
- “Multimodal analysis of cell-free DNA through third generation sequencing for cancers with increased incidence”; NATIONAL PLAN OF RECOVERY AND RESILIENCE, COMPONENT 9 - Support for the private sector, research, development and innovation, INVESTMENT 8 - Development of a program for attracting highly specialized human resources from abroad in research, development and innovation activities. CALL FOR PROJECTS: PNRR-III-C9-2022-I8, APPLICANT: CAROL DAVILA UNIVERSITY OF MEDICINE AND PHARMACY.
- “Molecular pattern of tumour persistence and treatment resistance in localized bladder cancers (BC)”; NATIONAL PLAN OF RECOVERY AND RESILIENCE, COMPONENT 9 - Support for the private sector, research, development and innovation, INVESTMENT 8 - Development of a program for attracting highly specialized human resources from abroad in research, development and innovation activities. CALL FOR PROJECTS: PNRR-III-C9-2022-I8, APPLICANT: CAROL DAVILA UNIVERSITY OF MEDICINE AND PHARMACY.
- New predictive factors of response in NSCLC patients undergoing first-line chemotherapies by cell-free DNA profiling with Nanopore sequencing, TRANSCAN2022-784-090, UEFISCDI.

### **The doctoral activity**

I completed my doctoral studies in 2018, by publicly defending my PhD thesis entitled “THE DETERMINATION OF IMMUNOLOGICAL FACTORS IMPACTING THE PROGNOSIS AND RESISTANCE TO TREATMENT IN BREAST CANCER”, having Professor Rodica Anghel, PhD. as scientific coordinator.

### **Publishing and editorial activity**

My editorial activity, generally carried out throughout my professional career, but especially during the doctoral and postdoctoral period and after joining the teaching staff of the University of Medicine and Pharmacy “Carol Davila” Bucharest, consisted in publishing one chapter as co-author at national publishing houses: Clinical Studies and Research in Oncology (Studii clinice și cercetarea în oncologie), Laurentia Gales, Anca Zgura, pp. 218-232, chapter in General Oncology - University Manual (Oncologie Generală - Manual Universitar), coordinator Professor Rodica Anghel, PhD., “Carol Davila” University Publishing House, Bucharest, 2019, ISBN 978-606-011-045-3.

### **Research activity**

My research activity is highlighted by the publication of over 38 articles indexed in Web of Science, over 20 articles published in national and international journals indexed in international databases (BDI), 6 research grants, as project manager or project team member and by participating as a member or principal investigator in the research team of a clinical trial.

### **Development directions of my future academic and scientific research career**

The future academic professional activity will focus on the training of young doctors, by guidance towards training and development through new knowledge, skills and research, oriented towards continuous medical education. These desiderata will be materialized by organizing interactive postgraduate courses, workshops, practical demonstrations, generally directed at oncology, targeting directions such as immunotherapy.

In the future, I want to develop the scientific activity, which will focus, as before, on participating in international and national congresses, conferences and other events in the field, for the dissemination of information obtained from the research projects I lead. The results of the research will also be outlined in the articles and books that I will publish.

The completion of the research project will be materialized by the close collaboration I will have with students, residents, PhD students or teachers within the Discipline, in order to maintain and increase the standards of university and professional excellence. Taking into account the experience I gained so far in setting up multidisciplinary teams involving young doctors, I will continue to access new grants or research/educational projects that will allow me to achieve my professional and academic goals.