

**UNIVERSITATEA DE MEDICINĂ ȘI FARMACIE  
„CAROL DAVILA”, BUCUREȘTI  
ȘCOALA DOCTORALĂ  
MEDICINĂ GENERALĂ**

**Perspective moleculare  
și genomice în medicina modernă**

**REZUMATUL TEZEI DE ABILITARE**

**CANDIDAT:  
Conf. Univ. Dr. Dragoș Crețoiu  
Universitatea de Medicină și Farmacie Carol Davila București**

**2024**

## ABSTRACT

I am a medical doctor and researcher specializing in Medical Genetics, with over two decades of experience in both clinical practice and scientific research. My professional journey has taken me from the completion of my doctoral studies at Carol Davila University of Medicine and Pharmacy in Bucharest to becoming a Senior Researcher at the Alessandrescu-Rusescu National Institute for Maternal and Child Health. Throughout my career, I have been dedicated to advancing the field of cellular and molecular medicine, particularly through my work on telocytes, a unique type of interstitial cell.

After obtaining my Ph.D., my initial focus was on cellular biology, histology, and tissue morphology, and I soon became fascinated by the intricacies of telocytes. Working closely with Acad. Laurențiu M. Popescu, we discovered that these cells—initially thought to resemble interstitial Cajal-like cells—had distinct characteristics that set them apart from other interstitial cells. Our team was the first to reveal their presence in several organs, including the heart, lungs, uterus, and skin, using both immunohistochemistry and advanced microscopy techniques. I was the first to publish a 3D reconstruction of telocytes, which opened new avenues for understanding how these cells function within tissue networks.

My research interests soon expanded to explore not only the structural features of telocytes but also their roles in tissue regeneration, intercellular communication, and their involvement in various pathological processes, including inflammation and carcinogenesis. By employing proteomic and genomic analysis, I have been able to study the genetic and protein expression profiles of telocytes, shedding light on their potential in regulating local homeostasis and influencing stem cell activity. The combination of these approaches has been central to my work in cellular signaling, regeneration, and the broader implications for tissue repair.

My contributions to the field extend beyond telocyte research. I have been actively involved in genetic studies, focusing on the regulatory mechanisms that govern gene expression, particularly in the context of diseases like cancer and cardiovascular conditions. My collaboration with international researchers has led to a series of studies on microRNAs and their role in regulating fibrosis, cellular proliferation, and tissue pathology. One of my key discoveries was the involvement of miR-433 in cardiac fibrosis, a breakthrough that has implications for the treatment of heart diseases where fibrosis is a major factor in disease progression.

As a medical geneticist, I have also dedicated much of my career to exploring this field. I have led research projects that aim to integrate genetic insights into personalized medicine, particularly in the context of gynecological cancers such as ovarian cancer. One of the highlights of my career was securing a patent for a novel method to assess chemosensitivity in ovarian cancer, which has the potential to transform how we approach chemotherapy treatment by tailoring it to the specific genetic makeup of the patient's tumor.

Throughout my academic career, I have taken great pride in educating the next generation of medical professionals. At Carol Davila University, I have taught courses in both Cellular and Molecular Medicine and Histology as well as Medical Genetics, sharing my expertise in cutting-edge research and clinical practice with students and professionals alike. Mentoring students and junior researchers has been one of the most rewarding aspects of my career, as I see them contribute to the field with their own innovative ideas and research.

In addition to my teaching and research responsibilities, I have been an active member of several editorial boards for high-impact scientific journals. This role has allowed me to stay engaged with the latest developments in my field while contributing to the peer-review process, ensuring that the research being published meets the highest standards of scientific rigor.

My work has been recognized with numerous awards, including several from the Romanian National Research Council (CNCS), and I have had the honor of presenting my findings at conferences around the world. These accolades are a testament to the collaborative efforts of my research teams and our commitment to pushing the boundaries of what is possible in medical science.

Looking ahead, I remain committed to exploring the regenerative potential of telocytes and their application in novel therapeutic strategies. As our understanding of cellular biology deepens, I believe that we are on the verge of breakthroughs that will not only advance our scientific knowledge but also have direct and meaningful impacts on patient care. In addition, genetics will continue to be a central part of my research, particularly in the areas of personalized medicine and prenatal diagnostics. I aim to further explore the genetic and epigenetic mechanisms that influence cell behavior, particularly in the context of disease progression and treatment responses. By integrating genomic insights into clinical practice, especially in obstetrics and oncology, I hope to develop more targeted therapies that are tailored to individual genetic profiles, ultimately enhancing patient outcomes and offering new hope in managing complex diseases.