



PhD student:

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Research project: Genetics, Telomeres, Metabolomics and Autoimmunity in Familial Non Medullary Thyroid Cancer

Abstract:

Familial non-medullary thyroid carcinoma (fNMTC) accounts for up to 10% of thyroid cancer cases, yet its pathogenesis remains largely unknown. This PhD project aims to characterize the clinical features and underlying molecular mechanisms of fNMTC by evaluating the integrated role of telomeric, genetic, and metabolomic alterations in its tumorigenesis. The study will recruit patients with fNMTC, their unaffected relatives, and a control group with sporadic non-medullary thyroid cancer. Peripheral blood samples will be collected to analyze telomere length, germline variants (via whole exome sequencing), and metabolic profiles. Clinical, autoimmune, and genealogical data will also be gathered. The project is based on a multidisciplinary collaboration involving endocrinology, molecular biology, medical genetics, and clinical pathology. Unraveling the pathogenic mechanisms of fNMTC may lead to the identification of susceptibility biomarkers and clarify disease-specific traits, ultimately improving early diagnosis, patient monitoring, and personalized medicine strategies.