



## PhD in Organic and Medicinal Chemistry

**Title:** Hits study and optimization for the targeting of non-coding RNAs : therapeutic innovation in cancer and neuroinflammatory diseases

**Keywords:** RNA ligands, lncRNA, cancer, chemotherapy

**Scientific Advisor:** Dr. Maria Duca, PhD, Directrice de Recherche CNRS  
(<https://icn.univ-cotedazur.fr/maria-duca>)

**Starting date:** February-April 2023

**Decision date :** November 2022

**Host Laboratory:** Université Côte d'Azur – Institut de Chimie de Nice

**Project:** Long non-coding RNAs (lncRNAs) constitute the largest class of non-coding transcripts in the human genome and have been shown to play important functional roles in development and disease processes. Several of these large, diverse transcripts, which are greater than 200 nucleotides in length, have been proposed as therapeutic targets since they play a crucial role in various aspects of cancer progression such as the regulation of the expression of oncogenes. As these transcripts contain structured RNA elements, the approaches based on the use of small-molecule RNA ligands to probe the specific functions and interactions of these domains thus represents an exciting avenue toward the discovery of promising drug candidates as well as chemical biology tools for a better understanding of lncRNA biology.

The aim of the present project is pursuing the development of new bioactive molecules targeting MALAT1 lncRNA that have been identified after the high-throughput screening of chemical libraries on this original target. The aim of the PhD work will be to synthesize new series of analogs for the identified hits that will be tested as MALAT1 specific ligands and for their potential anticancer activity.

**Eligibility:** the candidate must hold a Master degree in organic or medicinal chemistry obtained less than three years ago. The candidate should be a highly motivated person with the willing to work at the chemistry/biology interface. He/she will have the opportunity to develop advanced laboratory skills through access to the core facilities of the Institute and through work in collaboration with Sanofi.

**Application procedure:** candidates should send their CV (including contacts of previous advisor(s)) and a motivation letter, to [maria.duca@univ-cotedazur.fr](mailto:maria.duca@univ-cotedazur.fr)

**Laboratory:** Institut de Chimie de Nice (ICN), Faculté des Sciences, 28 avenue Valrose, 06100 Nice, France (<https://icn.univ-cotedazur.fr/tna>)

