**Studying and manipulating regulatory functions of p53 cancer regulator mRNA**

**Plano de trabalho:**

Tumor suppressor and protooncogene *p53* is mutated in half of all cancers and for that reason it is the most researched gene. Functions of p53 protein were the subject of intense studies for decades. However, it was not until recently that our group discovered that part of p53's functions reside in p53 mRNA (Candeias et al., Nat Cell Biol 2008; Cancer Cell 2012). p53 mRNA has the capacity to bind and regulate the localization and function of target protein(s), similar to what has been described for non-coding RNAs. Several proteins with roles in different stress pathways or carcinogenesis can bind p53 mRNA but very little is known about the effect of p53 mRNA on these proteins. This project aims to investigate the importance of p53 mRNA non-coding functions on cell physiology and carcinogenesis. The identification of new p53 mRNA targets will associate p53 with new cellular pathways and open new possibilities for research and therapy. We aim to:

a. Identify new target proteins of p53 mRNA non-coding functions;
b. Visualize p53 mRNA in living cells;
c. Investigate new non-coding functions in p53 mRNA;
d. Test the importance of p53 mRNA non-coding functions in carcinogenesis and disease.

**Orientador e local de realização do projeto:**

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