PhD position in BioTechnology for health

Strasbourg-Illkirch, France

Title. **Aptamer-mediated selective and modulable siRNA delivery**
Keywords. **aptamer-based conjugates, active targeting, nucleic-acid therapy**

Project description

A PhD is available in the Laboratory of Bioimaging and Pathologies at the CNRS/Université de Strasbourg, funded for **3 years** (starting date: **01/09/2024**) by the **French National Research Agency** (**ANR**).

The project aims to develop versatile/modulable therapeutic strategies based on aptamer-multifunctional molecular conjugates as innovative active targeting tools to enhance the selective delivery of nucleic acids (RNAi). Aptamers are single-stranded oligonucleotides, also known as chemical antibodies, which bind to their targets with high specificity and affinity. Despite their potential for targeting, they are still little studied. As cell entry doors of the conjugates, we will consider various cell surface receptors.

The PhD project will involve the design and synthesis of molecular conjugates, the determination of interaction kinetics between the conjugates and the cell receptors, the intracellular trafficking and the quantification of the biological effects of the conjugates. The objective is to provide strategies based on multivalent/multispecific nucleic acid aptamers as innovative active targeting tools. These chimeric molecules are intended to be adaptable to several biological models.

Full description:
https://thesisprojects.unistra.fr/publications/result_topic_individual/1715702574/?session_scope=current_sessions&search_mode=search_by_keywords&search_criterium=keywords&search_value=choulier&search_page=1&search_position=1&topic_id=2721

Supervision, Teams and Environment

The candidate will be supervised by Dr. Laurence Choulier (UMR7021). The project is in collaboration between three research units localized in Strasbourg and Illkirch: UMR7021-Laboratory of Bioimaging and Pathologies, UMR7200-Biotechnology and Cellular Signalling, and UMR7156-Molecular Genetics, Genomics and Microbiology. The PhD student will be trained through research in a highly multidisciplinary environment (biology, biotechnology, bioimaging, chemistry, physics) within the three laboratories, which are 7 km apart and easily accessible by tram or bicycle.

PhD profile

S/he must have biotechnology, and ideally scientific background in the field of therapeutic nucleic acids and/or in bioimaging. The candidate should be motivated to acquire and further develop a wide range of techniques in molecular and cellular biology, biotechnology and bio-imaging. He/she should have good interpersonal skills to take an active part in the activities of research teams/units.

Application

Please send a motivation letter, CV, grade record (L3, M1 and M2) and recommendation letters to Dr. Laurence Choulier: laurence.choulier@unistra.fr