

Internship Proposal Form

Host Institution: Pasteur institute

Department: Immunology

Supervisor: Dr. Natacha Jugniot, Research Associate

Laboratory: “Dendritic cells and adaptive immunity”, CNRS UMR3738
Dr. Pierre Guermonprez, CNRS DR1

Master 2 Internship in Immunology:

Rewiring the Tumor Microenvironment using Lipid Nanoparticles-Mediated mRNA Delivery Within Myeloid Cells.

Internship Duration:

6 months

Internship Description:

Our team is seeking a highly motivated Master 2 student specializing in Immunology for an internship focused on lipid nanoparticles (LNPs) in the context of immuno-oncology. This position offers an excellent opportunity to gain hands-on experience in cutting-edge research within a world-renowned institute.

The tumor microenvironment is controlled by the infiltration of multiple myeloid cells. Some of these populations can play immunosuppressive roles and limit the onset of anti-tumor immunity. We aim at developing and evaluating new immunotherapeutic interventions enabling to activate key signaling pathways within myeloid cells enabling to boost anti-tumor immunity.

If you aspire to join an institute of excellence driven by curiosity, we invite you to become part of our team! Pasteur Institute, an interdisciplinary and international research institution, has made significant contributions to the fields of science, medicine, and public health for over 130 years, earning widespread acclaim. True to the humanistic vision of its founder, Pasteur Institute upholds the pioneering spirit essential for conducting advanced biomedical research.

Objectives:

- Produce and investigate the use of LNPs to target myeloid cells in the tumor-microenvironment.
- Evaluate the efficacy and safety of LNP formulations in vitro and in preclinical oncology models.
- Develop macrophages/DCs targeted formulations to rewire the tumor microenvironment and activate adaptive and innate immunity against solid tumors.

Responsibilities:

- Conduct laboratory experiments related to LNP formulation and characterization.
- Perform in vitro and in vivo studies to assess the therapeutic potential of LNPs in oncology.
- Analyze and interpret data using various scientific techniques and software.
- Present findings at laboratory/departmental meetings and prepare reports/publications.

Methods:

- Molecular cloning
- IVT and mRNA purification
- LNP formulation
- Cell culture and protein expression assays
- Flow cytometry
- Imaging tumor-microenvironment
- Pre-clinical models of cancers

Candidate Requirements:

- Currently enrolled in a Master 2 program in Immunology, Biotechnology, Pharmacy, or a related field.
- Strong academic record with relevant coursework in immunology, oncology, and nanotechnology.
- Practical laboratory skills and experience with molecular biology techniques.
- Good analytical and problem-solving abilities.
- Excellent communication skills and the ability to work collaboratively in a team environment.
- A strong interest for myeloid cells and cancer immunotherapy.

Application Process:

Interested candidates should submit the following documents:

1. A 1 page cover letter explaining their interest in the internship and relevant experience.
2. A detailed CV including academic achievements, laboratory skills, and any publications or presentations.
3. The contact information of two academic or professional references.
4. Academic transcripts from their master's program if applicable.

Application Deadline: August 1st 2024

Please send all application materials via email natacha.jugniot@pasteur.fr with the subject line "*Application for Master 2 Internship in Immunology.*" We look forward to receiving your application and potentially welcoming you to our team at Pasteur.