

Post-doctoral position

Molecular Virology of HIV-1



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Background

The persistence of latently HIV-infected cellular reservoirs harboring replication-competent proviruses, despite prolonged treatment with HAART (Highly Active Anti-Retroviral Therapy), is a major hurdle to virus eradication. These latently infected cells are insensitive to HAART and escape the host immune response. Activation of HIV gene expression in these cells combined with an effective HAART and a specific activation of the immune response has been proposed as an adjuvant therapy that could lead to the elimination of the latently infected reservoirs. In the context of the international consortium EU4HIVCURE, we are studying the molecular mechanisms regulating HIV-1 latency in its natural context represented by the provirus integrated in the cellular genome and organized into chromatin. We have demonstrated the critical role of the cellular cofactor CTIP2 in the establishment and the persistence of HIV-1 transcriptional latency in microglial cells, the Central Nervous System (CNS) resident macrophages and the main reservoir of the virus in the brain. In proof of concept studies, we showed that CTIP2-associated complexes are good targets in strategies aiming at reducing the reservoir size.

References:

<https://www.ncbi.nlm.nih.gov/pubmed/?term=rohr+o>

Project

Mass spectrometry analysis allowed us to identify new CTIP2 partners. We will focus this project on the biochemical and the functional characterizations of these new CTIP2-associated complexes. We will study the impact of these molecular complexes on the establishment and the persistence of HIV-1 latency.

Candidate Profile

Strong motivations and autonomy

Technical skills of particular interest:

- Biochemistry of proteins and nucleic acids
- Culture of cell lines and PBMC
- Overexpression and knock-down of protein expression
- Immunofluorescence / FRET-FLIM / FACS analysis
- Quantitative Chromatin IP / Q-PCR

Academic skills of particular interest:

- Molecular and cellular biology
- Regulation processes of gene transcription
- Epigenetic
- Molecular virology
- Cellular and viral regulations of HIV-1 expression

Type of support: Three years ANRS grant / Unistra CDD contract

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