

Master program in Cancer Biology

Internship proposal form 2024

MASTER 2

Title	Function of alternative DNA structures in gene expression and cancer
Host laboratory	Transcription and Epigenomics, IGMM
Name of the PI	Jean-christophe Andrau
Supervisor	Jean-christophe Andrau
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Description (10 lines)	<p><i>We have recently shown that G-quadruplex (G4) secondary structures are essential for chromatin opening and transcription activation, including at the promoters of many oncogenes^{1,2}. During his/her internship, the student will contribute to better understand this process by developing a new assay to detect G4s in vitro and in vivo.</i></p> <p>1- Esnault, C. <i>et al.</i> G4access identifies G-quadruplexes and their associations with open chromatin and imprinting control regions. <i>Nat Genet</i>, doi:10.1038/s41588-023-01437-4 (2023).</p> <p>2- Esnault, C. <i>et al.</i> G-quadruplexes are promoter elements controlling nucleosome exclusion and RNA polymerase II pausing. <i>bioRxiv</i>, 2023.2002.2024.529838, doi:10.1101/2023.02.24.529838 (2023).</p>
Duration (2 to 6 months)	6 months