Internship Proposition
(one page max)
Master 2 GP Immunology & ImmunoIntervention (I^3)
2024-2025

Lab: UMR 1302 Inserm/Nantes Université - INCIT

Team: 3 "Anti-tumor immunosurveillance and immunotherapy"

Name and position of the supervisor: GERVOIS-SEGAIN Nadine (PR)

Email of the supervisor: nadine.gervois@univ-nantes.fr

Candidate (if internship filled): PICHON Marine

Title of the internship: Role of TIGIT and its interactors in the regulation of the anti-tumor T-cell response in human colorectal cancer

Summary of the internship proposal:

Despite improvements in screening, diagnosis and treatment, colorectal cancer (CRC) is the third most common cancer and second in terms of mortality. It is now recognized that a high immunoscore, defined as the *in situ* infiltration of tumor-infiltrating lymphocytes (TILs), particularly CD8 T cells, is associated with a better prognosis, a finding that favors the development of immunotherapies.
Nevertheless, the efficacy of these T cells can be hampered by the presence of inhibitory receptors. Our team recently highlighted the high expression of the immune checkpoint TIGIT by CRC TILs, and of its main ligand CD155 by tumor cells (Ducoin et al., 2022). In this context, a more precise knowledge of all TIGIT interactants is an essential prerequisite for assessing their role in controlling the intensity of the anti-tumor T-cell response and developing robust, targeted immunotherapy.
The major objectives of this program are:
- analyze *in situ* (immunohistochemistry) and *ex vivo* (multiparametric cytometry) expression of TIGIT and its interactants in CRC,
- study *in vitro* the role of the different partners in the anti-tumor response of polyclonal CD8 TILs (and clones) derived from CRC tumors following the generation of modified cell lines (tumor cells and T cells) rendered KO for one or other of these molecules (2D models and spheroids).

Ducoin et al., Cancers (Basel), 2022, 14 (17):4261

Option(s) linked to the project:

☐ Clinical Research Profile (Recherche Clinique)
☐ Data Analyst Profile (Recherche et Analyse de Données Biologiques)
X Experimental Biology Profile (Recherche Expérimentale)

Form to be sent by email to: gpi3@univ-nantes.fr