INNOVATION IN IMMUNOTHERAPY & IMMUNOMONITORING PLATFORM (PI3)

Expertise

- Development of flow cytometry tools for quantification and functionality evaluation of innate and adaptive cell subsets
- Analysis of Ag specific responses
- Quantification of soluble parameters
- Development of multi-parametric IF staining to characterize immune contexture in situ
- Development of cytometry tools to characterize immune cells, activation status and functionality in syngeneic immunotherapy murine tumor models

Applications

- Longitudinal immuno-monitoring of clinical trials
- Efficacy evaluation of compounds targeting innate or adaptive immune functions
- Evaluation of blood immune cell activation or inhibition status
- Immune cell competence in blood
- Quantification of secretome
- Detection by in situ multi-IF of the localization, structuration and activation status of immune cells within the tumor environment in clinical trials and pre-clinical models
- In vivo, evaluation of new therapeutic strategies or immunotherapy drug candidates on tumor control and anti-tumor immune response in pre-clinical

Instrumentation

- FACS CANTO-II (BD)
- Access to LSR-II Fortessa (BD)
- Luminex (BIORAD)
- ELISA (Multiskan FC)
- FLUOROSPOT (CTL)
- DIVA (BD)
- FlowJo (TreeStar)
- GraphPad Prism

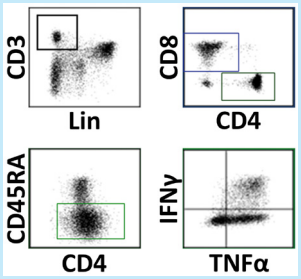
The PI3 platform develops tools to analyze immune parameters in human (blood, tumor environment) and murine tumor models to analyze the deleterious impact of tumors on the immune system and the consequences of innovative immunotherapy strategies.

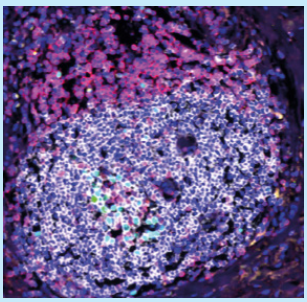
- In the context of clinical trials, **PI3 performs longitudinal immune monitoring studies on human blood** to identify predictive factors of response and define mechanisms of primary or acquired resistance in order to discover new immunotherapy targets.
- **PI3 is developing multi-IF staining tools to assess the in situ immune contexture in human tumors in collaboration with the Research Pathology Platform - East**
- **PI3 is developing immunophenotyping tools in syngeneic murine tumor models** to evaluate new immuno-therapeutics and measure the anti-tumor immune response in collaboration with the LMT.

The PI3 platform provides expertise in human and mouse anti-tumor immune response with a particular focus on innate and adaptive immune cells at the phenotypic and functional levels both in the periphery and in situ at the tumor site.

Based on highly competent personnel, we develop:

- Customized flow cytometry panels to investigate in human and murine models i) the expression of targets of interest on immune cells, ii) the functional competence of immune cells of interest, iii) the tumor Ag-specific response and iv) the impact of new immuno-modulators in pre-clinical studies.





Multi IF staining to assess the in situ localization, structuration and activation status of immune cells and the target expression before and after immunotherapy treatments

The strong interactions with teams of the CRCL IVI department and CLB/DRTI (C Caux, T Renno, J Marie, P Saintigny) allows the development of projects combining immunological, molecular and genetic dimensions (RNA-seq, neoepitopes, immune signature,...) from basic to translational research.

Type of service

- Clinical trial immuno-monitoring
- Translational projects
- Pre-clinical projects
- Development of in situ evaluation of immune cell interactions in tumors (collaboration with pathology platforms)
- Immune cell characterization in syngeneic murine tumor models (collaboration with LMT)

Advice for sample transfer

- Whole blood on EDTA for phenotypic analyses and Heparin for functional analyses within 3h after sampling
- Whole blood samples arrival before 11h for functional analyses and before 14h for phenotypic analyses
- PBMC freezing according to guide-lines for the best quality of immune cell populations
- Fresh murine samples (blood - heparin - spleen, tumor) transferred within 1 hour
- FFPE /frozen tumor tissue

Mention us in your publications!

Together we will define if collabora-tive studies require co-authorship or acknowledgement as follows:

Plateforme d'innovation en immuno-monitoring et immunothérapie (PI3), Département de recherche trans-lationnelle et d'innovations, Centre Léon Bérard, Lyon France.
We thank the (specific coordinator name) for its contribution in i) clinical trial immuno-monitoring, ii) immune contexture analysis or iii) immuno-therapy preclinical murine models.

Contacts

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Project workflow

1. *Initial consultation (e-mail)*
2. *Project request*
3. *Discussion to refine/define the project for validation by the operational committee*
4. *Development of dedicated tools*
5. *Sample reception and processing*
6. *Analyses of the raw data with dedicated software Interpretation of the results and Production of a written report*

D.I.Y

There is no free access to platform equipment.

Christophe Caux (PhD)

– Coordinator

is a senior scientist with a strong expertise in the field of immuno-oncology. His scientific objective is to increase current knowledge on new targets on immune cells that could be transferred to clinical applications.

Christine Ménétrier-Caux (PhD)

– Immuno-monitoring

is a senior scientist with a long-standing history in cancer immunology, with a particular interest in DC /macrophages, T cells and lymphopenia. Since 2011 she has acquired experience in blood immuno-monitoring for clinical trials.

Bertrand DUBOIS (PhD)

– Immune contexture

is a senior scientist with long-standing expertise of the regulation of immunity versus tolerance in epithelial tissues with a focus on the biology of dendritic cells, T cells and B cells. Since 2013, he has set up tools to analyze the tumor immune contexture through multi-IF in situ analysis.

Submission form and more infos:
www.cancer-research-lyon.com