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Cancer treatment is continuously evolving with many potential medications being developed. However, clinical trials are costly, time-consuming, and expose patients to side effects. Without prior preclinical evaluation, the ethics, feasibility, and economics of conducting them would be questionable. Preclinical investigation of anti-tumor compounds on tumor models is an important step in the process of drug development. To obtain preclinical results with high predictive value for clinical trials, the choice of the preclinical tumor model(s) is a crucial point.

Human primary xenografts, directly obtained from patients ("Patient-Derived Xenograft" or PDX), constitute the main category of preclinical cancer models. They reproduce well the high heterogeneity of human cancers, procedures for assessment of therapeutic efficacy are well standardized for components used in monotherapies or in combination with standard treatment. The possibilities of *ex vivo* genetic or therapeutic manipulations before xenotransplantation are also important.

The research performed at the Laboratory of Preclinical Investigation is an important complement to the pharmaceutical development performed by pharmaceutical companies.

The platform is part of the [Translational Research Department](#).

## Activity

- Maintenance of around **300 PDX** (patient derived xenografts) panels
- **Preclinical experiments**: experiment design, *in vivo* grafting, treatments (monotherapies and combination), tumor follow-up, statistical analyses, tumors/organ collections, *in vivo* cell line injections, ...
- Study of **pharmacodynamic markers**

## Objectives

- Development of panels (breast cancers, ovarian cancers, uveal melanoma, NSCLC)
- Development of new panels :
- development of variants PDX (i.e. in man and in vivo resistant tumors, PDX obtained from bone metastases)
- new tumor types (prostate cancer, chordoma, carcinoma of the anal canal)
- new modelization (humanized PDX models, 3D-organoids models)
- Identify **biological markers** of response and resistance

## Available PDX

About 300 models are currently available, including breast cancers, colon cancers, non-small-cell and small-cell lung cancers, glioblastomas, uveal melanomas, lymphomas, ovarian cancers, prostate cancers, retinoblastomas, and others

## Networks

The platform is a member of the European **EuroPDX** consortium, which has the aim of sharing patient derived tumour xenografts for collaborative research projects and multicenter preclinical trials.

## Contact

All requests and proposals are opened for discussion and optimization in order to reach requested objectives and raised issues:

- [Didier Decaudin](#), MD, PhD, Head of the Laboratory of preclinical investigation
- [Elisabetta Marangoni](#), PhD

## Key publications

### Year of publication 2018

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Philippe De La Rochere, Silvia Guil-Luna, Didier Decaudin, Georges Azar, Sukhvinder S Sidhu, Eliane Piaggio (2018 Aug 6)

**Humanized Mice for the Study of Immuno-Oncology.**

*Trends in immunology* : 748-763 : [DOI : S1471-4906\(18\)30125-X](https://doi.org/10.1016/j.it.2018.08.001)

### Year of publication 2017

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Houcine Bougherara, Fariba Némati, André Nicolas, Gérald Massonnet, Martine Pugnière, Charlotte Ngô, Marie-Aude Le Frère-Belda, Alexandra Leary, Jérôme Alexandre, Didier Meseure, Jean-Marc Barret, Isabelle Navarro-Teulon, André Pèlerin, Sergio Roman-Roman, Jean-François Prost, Emmanuel Donnadieu, Didier Decaudin (2017 Dec 17)

**The humanized anti-human AMHRII mAb 3C23K exerts an anti-tumor activity against human ovarian cancer through tumor-associated macrophages.**

*Oncotarget* : 99950-99965 : [DOI : 10.18632/oncotarget.21556](https://doi.org/10.18632/oncotarget.21556)