Humanized Mouse Models for Evaluation of Cancer Therapies

Mice with a humanized immune system, so called “humanized” mouse models, have been established to study the complex interaction of the human immune system during human disorders. In case of cancer research, the in-vivo model ideally should recapitulate the biological characteristics of the human tumor and of the related tumor microenvironment in patient such as immune system.

Human immune system is reconstituted in immunodeficient mice using either human PBMCs or hematopoietic stem cells (HSCs). Humanized mice bearing human target tumor cells constitute relevant models for evaluation of cancer therapeutics such as bispecific antibodies, immune cell targeting antibodies.

• POC studies with hPBMCs reconstituted mice
  - Injection of human PBMC in irradiated NOG mice
  - IV Injection of B-cell lymphoma or SC injection of plasma cell myeloma
  - Tumor volume monitoring with caliper for SC tumor, mice termination when hind leg paralysis for IV tumor
  - Quantification of immune cell populations and tumors in blood bone marrow and spleen samples using flow cytometry analysis (IV tumor model)

• POC studies with hHSCs reconstituted mice
  - Injection of human HSC in BRGS mice
  - SC xenograft of lung and ovarian PDX tumor samples
  - Tumor volume monitoring with caliper
  - Mice termination for collection of blood, spleen, bone marrow and tumor
  - Quantification of immune cell populations using flow cytometry and immunohistochemistry analysis

A large panel of humanized mouse models to address specific immune cancer cell questions

- Human tumors xenografted with solid tumors (BT474A, Fabo, HCT-116, LoVo, PDX...) as well as hematological tumors (Gaudi, Karpas-299, Ramos...)

- In-vivo models to evaluate humanized tumors xenografted in different mouse models

- hPBMCs reconstituted NOG mouse model

- Humanized model to evaluate humanized tumor bearing mouse model are of interest to evaluate T cell recruiting compounds such as bispecific antibody or to evaluate engineered immune cell based therapy such as CAR-T cells.