Immuno-Oncology Platform - Proprietary Models (MDI)

IN VIVO TESTING SERVICES

Field of Application

Immune-modulating therapies are becoming increasingly important for treatment of cancer. Syngeneic tumor models provide a functional immune system to assess novel immunotherapeutic approaches. While classic syngeneic mouse models are based on the implantation of cultured cells, Reaction Biology's mouse-derived isograft (MDI) tumor models are propagated as tumor pieces in mice only. Hence, the major advantage of these novel tumor models is the preservation of primary tumor phenotype and intratumoral immune cell populations. The MDI tumors were derived from spontaneous tumors or carcinogen-induced tumors of mice.

Our Service

➢ MDI tumor models:

#	Model	Origin	Creation	RNA-seq	anti-PD1	anti-CTLA-4	Combination	therapeutic window	relevant immune cells
1	JA-0009	adeno-carcinoma	spontaneous	yes	low	low	low	2 weeks	M2 macrophages
2	JA-0017		spontaneous	ongoing	nd	nd	nd	>6 weeks	nd
3	JA-0032		spontaneous	ongoing	nd	nd	nd	4 weeks	nd
4	JA-2011	sarcoma	carcinogen	yes	low	low	nd	2 weeks	neutrophils
5	JA-2019		carcinogen	ongoing	high	high	nd	2 weeks	MDSCs/Tcells
6	JA-2041		carcinogen	ongoing	moderate	moderate	nd	3 weeks	MDSCs/Tcells
7	JA-2042		carcinogen	yes	moderate	moderate	high	2 weeks	Treg cells

nd = not determined

➢ Characterization

- all models were histologically characterized
- growth curves were established for all models
- all models were tested with reference compounds
- RNA sequence data are available for selected models

➢ Flow Cytometric Analysis

- Analysis of tumor infiltrating leukocytes and cells isolated from spleen and lymph nodes
- Multicolor 17 marker panel: T cells, MDSCs, Macrophages, NK cells, B cells, DCs
- Customized staining procedures are possible.

➢ Standard Study

Comprises among other things: (i) Tumor implantation; (ii) Measurement of animal weight (3x / week); (iii) Determination of tumor size by calipering

➢ Optional Services

(i) Blood sampling; (ii) Characterization of abundance and relative distribution of different immune cell subsets in the tumor and lymphatic tissues by flow cytometry (iii) paraffin embedding of tumor tissue or organs; (iv) Histological & pathological analysis; (v) Cytokine determination; (vi) Provision of tumor tissue for target validation; (xiii) Magnetic resonance tomography; (ix) PET/CT.