

# INFLAMMATION & IMMUNOLOGY

## Primary Immune Cell Assays

Specialize in primary immune cells with a full panel of assay format (in vitro and ex vivo) on cells from different species, providing multiple optional readouts.

### Primary Immune Cells

- Objects: Whole blood, PBMC, T cells (pan-T, CD4+, CD8+, Treg, etc), B cell, Macrophage, NK cell, PMN, DC, Tissue resident lymphocytes (spleen, LN, bone marrow, tumor), etc.
- Species: human, monkey, dog, rat, mouse

### Readouts and Research Tools

- Cell surface / intracellular / intranuclear markers, phospho-protein, transcriptional factors, cytokine, chemokines (FACS/ ELISA/Luminex/ELISPOT), etc
- BD Attune NxT, BD FACSARIA II, AID ELISpot Reader, Luminex 200, VICTOR Nivo, SpectraMax i3x, etc

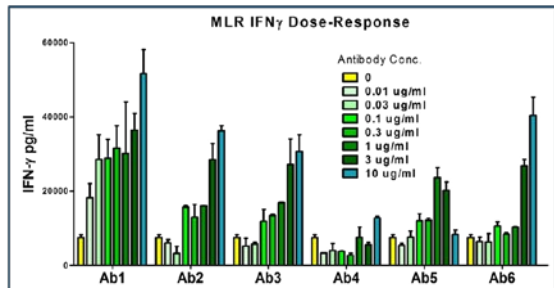
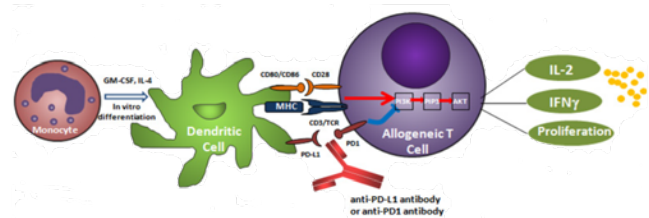
### Assay Formats

- Mixed Lymphocyte Reaction (MLR)
- Engineered tumor cell / T cell co-culture
- T cell activation and proliferation
- CMV antigen recall
- Target specific reporter gene assay
- Th1/Th2/Th17/Treg differentiation and function
- T cell killing assay (Bs-Ab)
- BTK inhibitor assay
- B cell activation and signaling assay
- NK cell activation/cytotoxicity assay
- Macrophage polarization (M1, M2) and phagocytosis assay
- Macrophage (M2) and T cell co-culture assay
- DC differentiation /activation assay
- Basophil activation assay
- MDSC suppressive assay
- JAK-STAT signaling related assay (full panel)
- T cell regulation following A2AR pathway
- Multi-cytokine release assay(whole blood level)
- Tumor Infiltrating Lymphocytes analysis and functional assay
- Primary cell biomarker validation
- Receptor occupancy test
- ELISpot assay

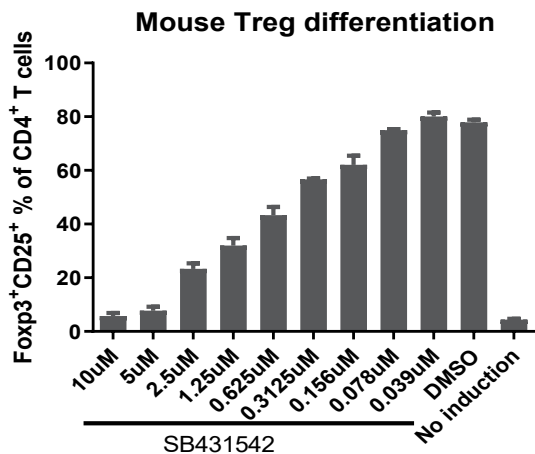


# Primary Immune Cell Assays

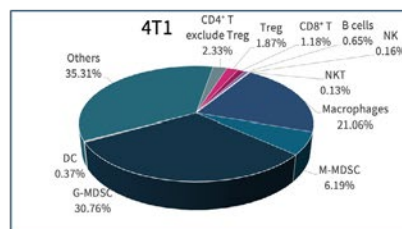
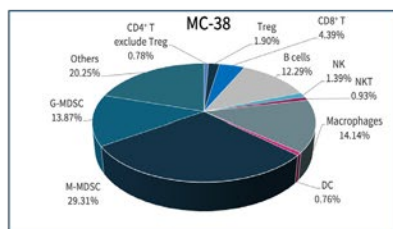
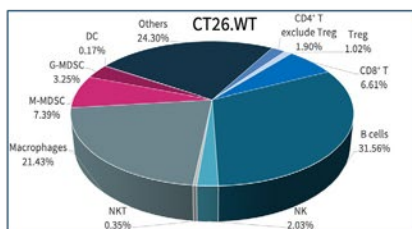
## Mixed Lymphocyte Reaction (MLR)



## Treg Induction Assay on Naïve T Cells



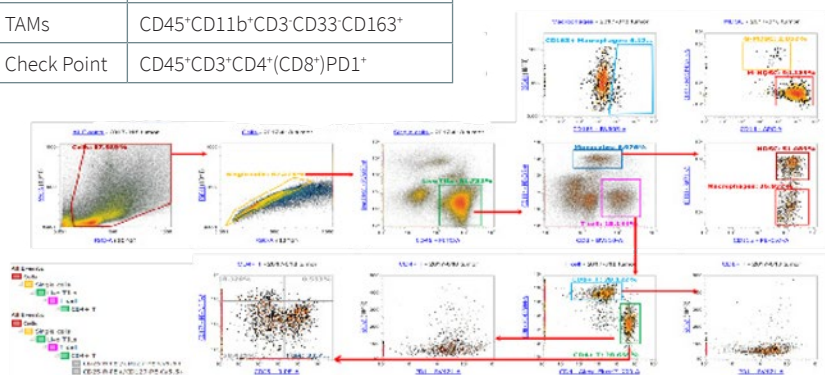
# Tumor Infiltrating Lymphocyte (TIL) Phenotype/Functional Analyses



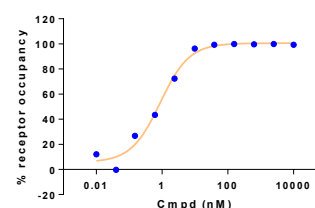
TIL baselines were profiled in top 10 popular mice syngeneic models: CT26.WT, MC-38, 4T1, B16-F10, EL4, EMT-6, Hepa1-6, A20, LLC1, Renca.

## TILs in Human Lung Cancer Samples

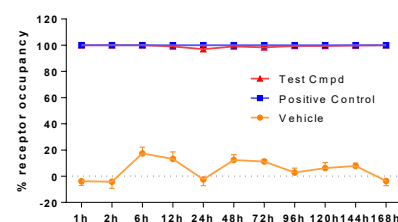
Cell Type	Marker
Treg	CD45 <sup>+</sup> CD3 <sup>+</sup> CD4 <sup>+</sup> CD8 <sup>-</sup> CD23 <sup>-</sup> CD127 <sup>-</sup>
G-MDSC	CD45 <sup>+</sup> CD11b <sup>+</sup> CD33 <sup>+</sup> CD14 <sup>+</sup> CD15 <sup>+</sup>
M-MDSC	CD45 <sup>+</sup> CD11b <sup>+</sup> CD33 <sup>+</sup> CD14 <sup>-</sup> CD15 <sup>-</sup>
TAMs	CD45 <sup>+</sup> CD11b <sup>+</sup> CD3 <sup>+</sup> CD33 <sup>+</sup> CD163 <sup>+</sup>
Check Point	CD45 <sup>+</sup> CD3 <sup>+</sup> CD4 <sup>+</sup> (CD8 <sup>+</sup> )PD1 <sup>+</sup>



RO for Memory CD4<sup>+</sup> T Cells Ex-vivo



RO for Memory CD4<sup>+</sup> T Cells In-vivo



Receptor Occupancy (RO): Pharmacodynamic (PD) marker of target engagement

# In Vivo Pharmacology

## Respiratory Disease

- Ovalbumin-induced asthma in mice and rats
- Rapid OVA-induced pulmonary eosinophil influx model in rats
- Bleomycin-induced pulmonary fibrosis in mice
- LPS-induced pulmonary neutrophilia in mice and rats
- IL-13 induced mouse respiratory inflammation in mice

## Arthritis

- Collagen induced arthritis in mice/rats
- Adjuvant induced arthritis in rats

## Multiple Sclerosis (MS)

- MBP-induced EAE in rats
- MOG-induced EAE in mice
- PLP-induced EAE in mice

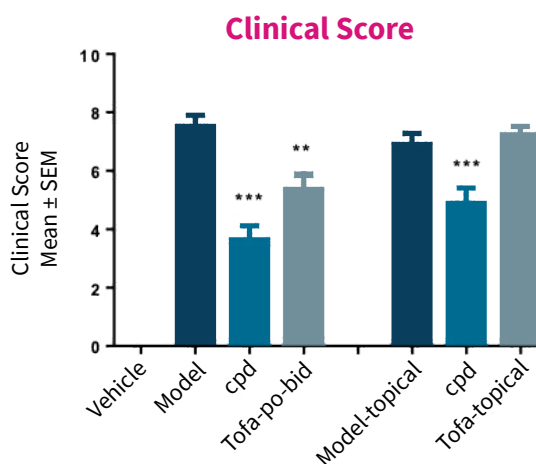
## Inflammatory Bowel Disease (IBD)

- DSS-induced IBD in mice/rats
- TNBS/DNBS-induced colitis in mice/rats

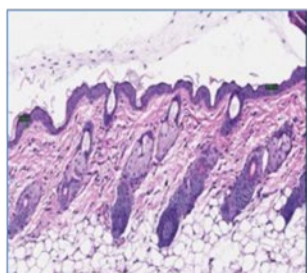
## Skin Disease

- Psoriasis model: IMQ and IL-23 induced in mice
- Bleomycin Induced sclerosis in mice

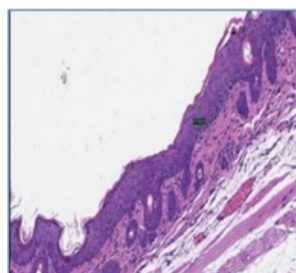
- LPS-induced cytokine release (mice, rats, monkey)
- LPS-induced lung neutrophilia in mice/ rats
- Rapid OVA-induced pulmonary eosinophil influx model in rats
- Air pouch
- Delayed type hypersensitivity (DTH) (DNFB, Oxa., PMA)
- Passive cutaneous anaphylaxis (PCA)
- IL-13 induced respiratory inflammation (mouse)
- CLP (cecal ligation & puncture) in mice
- Hair growth in mice
- Vascular permeability model
- (Miles assay, EIU, blister, wheal)
- Others: systemic inflammation (Con A, IL1 $\beta$ ), granuloma



## IMQ-induced Psoriasis



Control



Model



Control



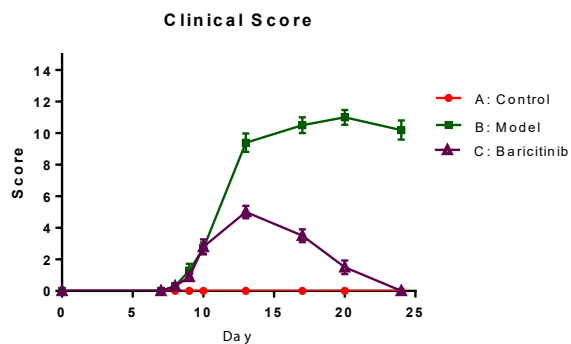
Model



Tofa

# In Vivo Pharmacology

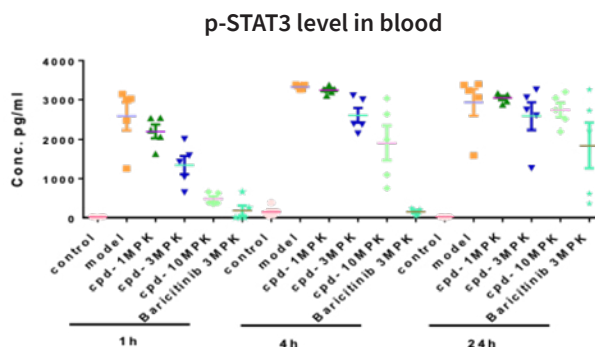
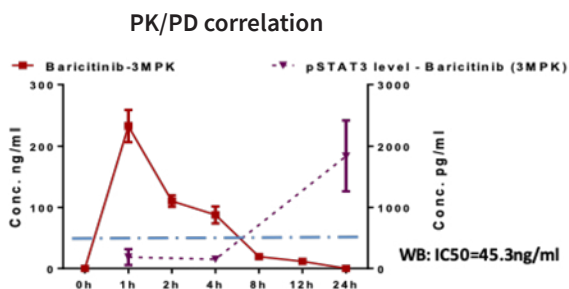
## Rat Adjuvant-induced Arthritis Model (AIA)



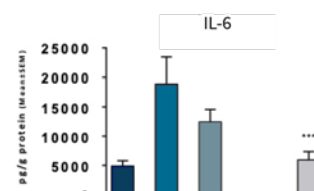
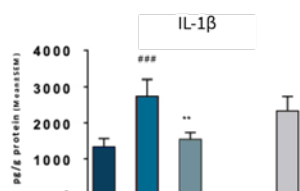
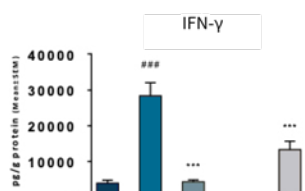
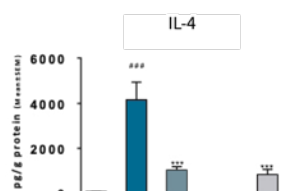
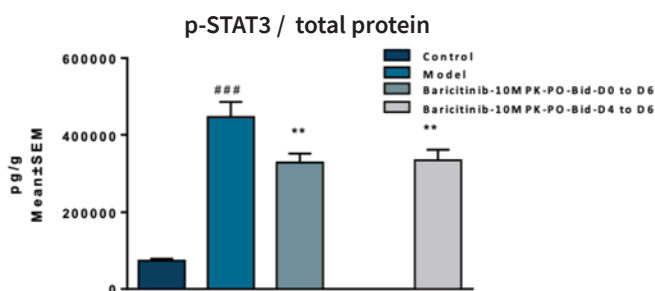
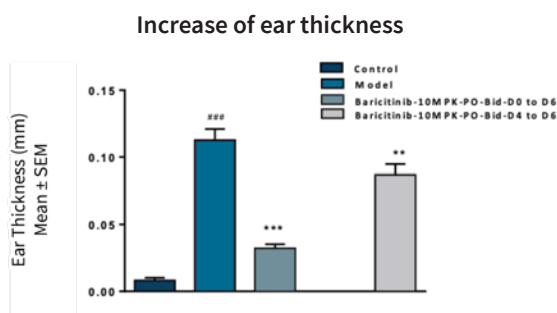
Control

Model

Baricitinib



## DNFB-induced DTH Model



## Cytokine Level in Skin Lesion