



Immunology

ChemPartner
Dedicated to LifeScience

Immune Assays and *in vivo* Models Overview

ChemPartner Immunologists specialize in T cell biology, and other primary immune assays. We use readouts from proliferation, ELISA, Luminex as well as flow cytometry analyses to help our global Pharma and Biotech partners in drug discovery for cancer immunotherapy and autoimmune diseases.

The efficacy and mode of action (MOA) of client compounds are further characterized in our extensive array of *in vivo* pharmacodynamics (PD) and pharmacological models of human diseases, including rheumatoid arthritis (RA), multiple sclerosis (MS), asthma, inflammatory bowel diseases (IBD), skin inflammatory diseases, respiratory inflammation, and syngeneic tumor models. We complement normal efficacy studies with additional imaging studies, including microCT of bone mineral density for evaluating drugs that are used to treat RA bone erosion, together with collecting synovial fluid to analyze cytokine content as surrogate markers.

Our inflammatory PD models include LPS-induced TNF α release in rodents or monkeys, skin DTH, and air pouch assay, while immune profiling of bronchoalveolar lavage, and of isolated draining lymph nodes or inflamed tissues (FACS or IHC) provide opportunities for MOA understanding and biomarker discovery.

Contact

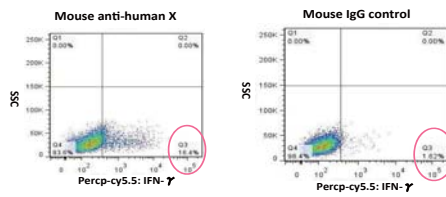
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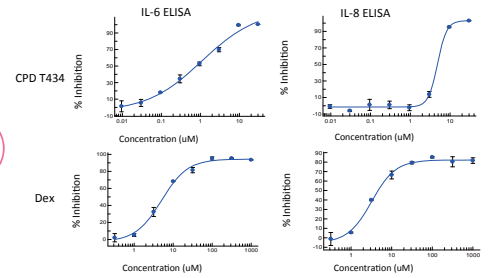
Primary immune cell assay & Immune cell line assay

- Whole blood/PBMC/splenocyte
- Isolated T cells (naïve CD4 T cell, total CD4 T cell, total T, hu/mu)
- Polarized Th1, Th17
- Isolated monocytes
- ELISA/Luminex cytokine assay
- CFSE staining FACS
- Intracellular cytokine FACS
- Antigen recall assay
- PBMC LPS-induced TNF α release
- TLR4-NF-kB reporter assay
- THP1 cytokine release assay
- Jurkat T cell (e.g., IL-2)
- TF-1
- Raji

T Cell Immunomodulatory Abs Enhanced Intracellular IFN γ Staining

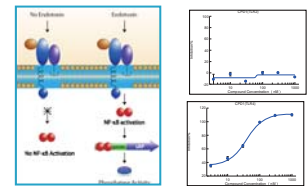
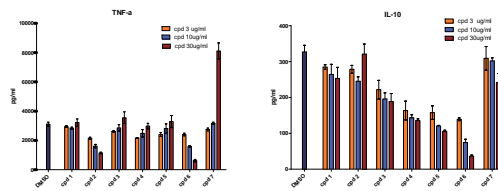
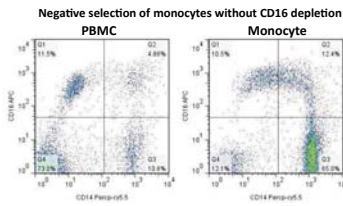


Cpd T434 and Dex Inhibit Cytokine Release in Human PBMC upon LPS



Human Primary Monocytes to Screen Compounds of Anti-inflammation

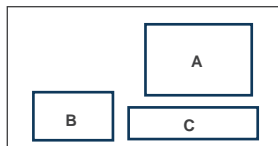
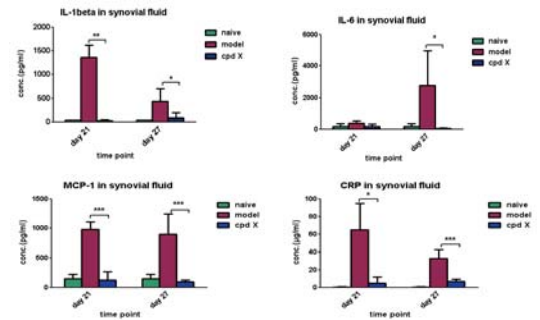
TAK-242 Specific Inhibition to TLR4 but not TLR2 in NF-kB Reporter Cells



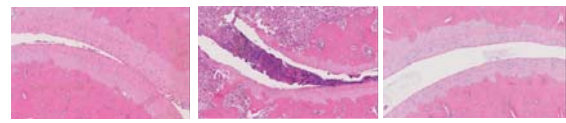
Autoimmune disease models

- Rat collagen induced arthritis (CIA)—paw swelling, clinical scoring, bone mineral density by micro-CT
- Synovial fluid cytokines
- Adjuvant induced arthritis (AIA)
- Mouse/rat Ova asthma model
- Experimental autoimmune encephalomyelitis model (MOG-induced EAE)
- Inflammatory Bowel Disease (DSS-induced)

Rat Collagen-induced Arthritis



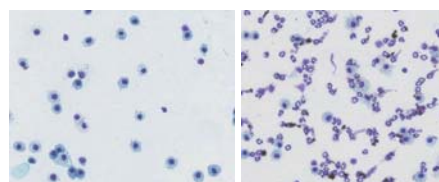
- A Synovial fluid cytokine measurement by Luminex
- B Micro-CT
- C Histology



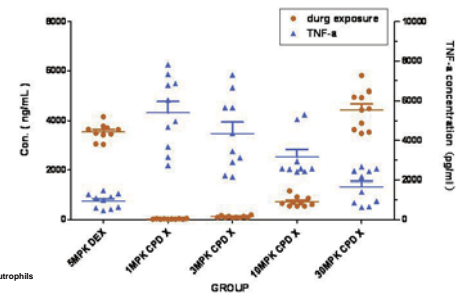
In vivo PD models

- LPS-induced TNF α release (rat, monkey)
- LPS-induced lung neutrophilia (mouse)
- Air pouch assay
- Delayed type sensitivity (DTH)
- Passive cutaneous anaphylaxis

LPS-induced Neutrophilia in Mouse Lung



PK/PD correlation in LPS induced Cytokine release model in rat-plasma



Cytokines from murine ears of DTH or PMA upon Dex or cpdC

