



PicoImmune® Immunology & Flow Cytometry Services

Our team of immunologists offer *in vitro* assays using primary human and rodent cells to conduct immunological and pharmacological investigations that will support you throughout the drug development process. Browse our immunology service offerings by cell type and connect with our specialists at www.PicoImmune.com; or email to: hello@picoimmune.com

Immune Cell Assays

T Cell

- T cell activation and proliferation (anti-CD3/CD28; PHA/Con A, PMA/ionomycin, SEB, anti-PD1, anti-CTLA4) via high throughput flow cytometry, or BrdU assay
- Antigen-specific recall response assay
- Target expression profiling on cell subsets (resting and activated)
- Screening for the ability to reverse T cell exhaustion
- Suppression assay with regulatory T cells.
- Modulation of differentiation and cytokine profile
- Chemotaxis and migration

- Mixed lymphocyte reaction (MLR: PBMC/T cell/DC, one way or two-way)
- Checkpoint blockade assays
- Cytokine secretion profiling (ELISA, Luminex, cytokine microarray, ELISpot)
- T cell surface marker expression analysis (flow cytometry)
- Analysis of naïve or memory T cell populations
- Expansion and functional analysis of rare antigen-specific T cells
- Natural or inducible regulatory T Cell (Treg) functional assays
- Immune synapse formation
- Cytotoxic T-lymphocyte killing
- Cytotoxicity testing of CAR-T cells
- Cytokine storm risk analysis
- AlphaLISA for Phospho SLP-76

B Cell

- Antibody production
- Activation and proliferation
- Antibody class switching
- Antigen presentation
- BCR signaling (BTK, CARD11/BCL10/MALT1 complex),
- BTK inhibition/degradation
- Target expression profiling on B cell subsets (resting and activated)



Dendritic Cell

- Flow cytometric analysis for DCs
- Imaging analysis for DCs
- DC maturation cytokine profiles
- Functional DC and T cell co-cultures
- Tolerogenic DCs
- Genetic manipulation of primary moDC
- Human dendritic cell activation of autologous antigen specific T cell

NK cell

- Target expression on NK cells
- Modulation of activation and killing (CD69, CD25 expression, Fas ligand, granzyme secretion)
- ADCC
- NK cell cytokine production by intracellular flow cytometry or Luminex

Macrophage/Monocyte

- Macrophage polarization and cytokine profiles
- Macrophage and T cells co-cultures
- Macrophage phagocytic assays
- Functional murine macrophage cell assays
- Monocyte activation test (MAT) for pyrogenic substances in pharma products (PyroMAT assay)
- Receptor internalization and trafficking

Mast Cell

- CD34+ progenitor cell differentiation to mast cells
- Degranulation: histamine, PGD₂, and β -hexosaminidase release
- Tryptase activity in mast cell culture

Neutrophil/Basophil

- Phagocytosis assay
- Enzyme release assay
- ROS and inflammatory mediator assay
- NETosis assay
- Interaction with various cell types assay
- Chemotaxis assay
- Respiratory burst
- Basophil activation test (BAT)
- Tumor- associated neutrophil (TANs) assay

ILC

- Flow cytometry assays
- Cytokine release assays
- Co-culture assays

Epithelial/Immune/Microbial Co-cultures

- Immune cells epithelial co-culture assays
- Barrier integrity assays (TEER)
- Flow cytometry assays
- Cytokine release assays

Fibroblast

- Epithelial-to-mesenchymal (EMT) assay
- Fibroblasts-to-myofibroblasts (FMT) assay
- M1 polarization assay
- M2 polarization assay

Platelet

- Activation assay



- Platelet-leukocyte aggregate analysis

Hematopoietic Stem Cell

- Murine and human HSC assays
- Growth and expansion
- Flow cytometric phenotyping
- Colony forming units (CFU-GM, etc)
- Transfection/genetic modification

Microglial Cell /Neuron

- Phagocytosis assays
- Co-culture assays
- Activation assays

Tumor/Immune Cell

- Tumor killing assays
- Tumor associated macrophages assay
- MDSC (Myeloid-Derived Suppressor Cells) suppression assay
- ADCC
- CDC
- ADCP
- T cell killing – LDH or DELFIA assay
- Modulation of tumor-derived immune mediators (e.g., eicosanoids, chemokines, cytokines)
- Direct cytotoxicity and cell cycle arrest

Novel IO Targets

- Biochemical and cell-based screening assays for novel immunotherapy.
- IC50 determination for small or large molecules against immune targets for:
PD-1: PD-L1/2, PD-L1:B7-1,
CTLA4:B7-1, CTLA4:B7-2, BTLA:
HVEM, CD28:B7-1, CD40: CD40L,
CD47: Sirpα, CD137:CD137L,

OX40:OX40L, GITR: GITRL, TIGIT:
CD155, IDO/TDO, COX1/COX2, HPK1,
GPR65 and more



Flow Cytometric Analysis

- Cell Sorting (FACS & MACS)
- Immunophenotyping
- Antibody screening (binding, internalization, etc)
- Multiplex cytometric bead array (CBA)
- Multiplex miRNA profiling (FirePlex)
- Multiplex mRNA profiling (PrimeFlow)
- phosphoprotein profiling (PhosphoFlow)
- Cell cycle, proliferation, apoptosis
- Protein translation analysis
- Nanoparticle size quantification, cellular uptake analysis
- Analysis of extracellular vesicle, such as exosome
- Custom antibody labeling and validation
- Custom cell isolation and validation
- Flow cytometry data processing

