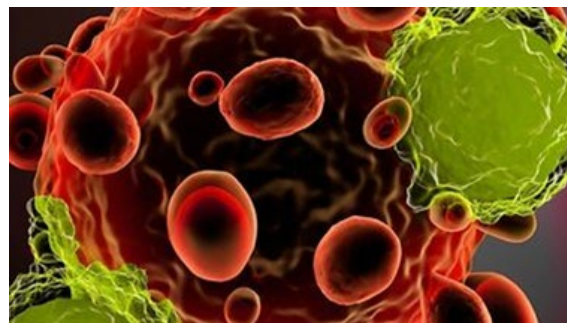




Immunology and Immuno-oncology Services

LET'S SUPPORT YOUR IMMUNOLOGY RESEARCH TO THE NEXT LEVEL

Our team of immunologists offer innate and adaptive immune cell *in vitro* assays using primary human and rodent cells to conduct functional testing that will support our clients throughout the drug discovery and development process. Browse our immunology service offerings by cell type and connect with our specialists at AxelaBio.com, or email to: support@axelabio.com



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 CFSE dilution or EdU/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
- Treg suppression assay
- 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
- 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, microscopy of receptor clustering at contact sites

- Cytotoxic T-lymphocyte killing
- Cytotoxicity testing of CD8 T or CAR-T cells
- Cytokine storm risk analysis
- AlphaLISA for Phospho SLP-76

B CELL

- Antibody production, ELISA or ELISpot for IgG, IgM, IgA.
- Activation and proliferation, CFSE dilution post anti-IgM/CD40L stimulation
- Plasma cell differentiation (CD27⁺CD38⁺ or CD138⁺ markers).
- 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, expression of CD83, CD86, CCR7 after stimulation (e.g., LPS, poly I:C).
- Functional DC and T cell co-cultures
- Tolerogenic DCs
- Genetic manipulation of primary moDC



- Human dendritic cell activation of autologous antigen specific T cell
- Antigen uptake assay, FITC-dextran or DQ-OVA internalization.

NK CELL

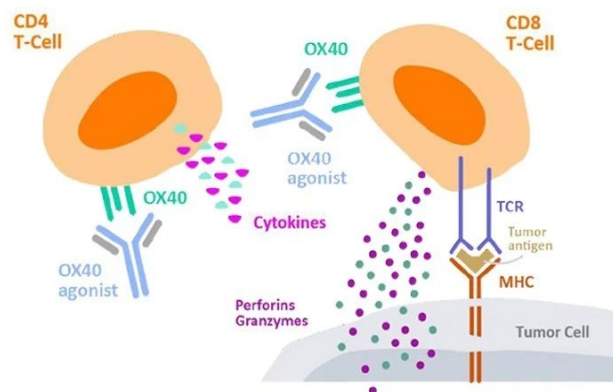
- Target expression on NK cells
- Modulation of activation and killing (CD69, CD25 expression, Fas ligand, granzyme secretion)
- Receptor profiling, NKG2D, KIR, DNAM-1, TIGIT, SIGLEC, etc.
- ADCC, AICC
- NK cell cytokine production by intracellular flow cytometry or Luminex
- Degranulation assay, surface CD107a mobilization
- Proliferation assay
- Exhaustion assay

MACROPHAGE/MONOCYTE

- Macrophage polarization (CD80/CD86 vs. CD163/CD206, etc).
- Cytokine release
- 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
- Oxidative burst assay, ROS generation (e.g., DCFDA or DHR flow assay)
- Antigen presentation assay, upregulation of MHC-II and co-stimulatory molecules (CD80/CD86).

MAST CELL

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



- Cytokine / chemokine secretion
- Calcium flux and signaling
- Fc ϵ RI-mediated activation
- Non-IgE activation via TLRs, complement (C3a/C5a), MRGPRX2 agonists, neuropeptides (SP)
- Transwell migration toward SCF, CCL2, CXCL12

NEUTROPHIL/BASOPHIL

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

EOSINOPHIL

- Extracellular trap formation (EET)
- Degranulation (EPO, EDN, histamine)
- Cytokine production
- Calcium flux
- Chemotaxis assay
- Cytotoxicity assay

INNATE LYMPHOID CELL (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 assay
- Co-culture assay
- Activation assay
- ROS / Nitric Oxide (NO) Production
- Migration / chemotaxis
- Calcium imaging

- Synaptic function
- Neuron-microglia co-culture

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
- Ki-67 staining
- CFSE / CTV dilution
- Colony formation / clonogenic assay
- 3D Tumor / spheroid assays

NOVEL IO TARGETS

- Biochemical and cell-based screening assays for novel immunotherapy.
- IC50 determination for small or large molecules against immune targets
- Immune Checkpoint Targets (TIGIT, LAG-3, VISTA, HHLA2, etc.)
- Co-Stimulatory Receptors (OX40, CD27, GITR, etc.)
- Bi-Specific Antibodies
- Antibody-Drug Conjugates (ADCs)
- Oncolytic Virotherapy
- CART-CAR-NK