

Immunology & Inflammation Tools



Inflammation is the immune system's response to potential danger signals and damage. The coordination of immune cells, inflammatory lipid mediators, and cytokines act to mount the appropriate immune response, resolve inflammation, and restore homeostasis. Immunomodulation is a powerful strategy that can be used to revolutionize the treatment of autoimmune diseases, cancer, and countless other inflammation-related disorders.

Explore the Immune System with Tools to:

- Study inflammatory pathways
- Explore innate and adaptive immunity
- Target cell signaling cascades
- Research the tumor microenvironment & immunometabolism

Tools to Study Inflammation

Inflammation plays an essential role in pathogen defense and shapes the immune response through the expression of inflammatory lipid mediators, cytokines, and transcription factors.

Inflammatory Lipid Mediators

Specialized Pro-Resolving Mediators (SPMs)

Item No.	Product Name
90410	Lipoxin A ₄
590410	Lipoxin A ₄ ELISA Kit
90420	Lipoxin B ₄
501920	Lipoxin B ₄ ELISA Kit
10878	Maresin 1
501150	Maresin 1 ELISA Kit
10012554	Resolvin D1
500380	Resolvin D1 ELISA Kit
10007279	Resolvin D2
501120	Resolvin D2 ELISA Kit
10007848	Resolvin E1
502150	Resolvin E1 ELISA Kit
18702	SPM D-series MaxSpec® LC-MS Mixture
19412	Lipoxin MaxSpec® LC-MS Mixture

See all SPMs at www.caymanchem.com

Lipidomics Services

Untargeted and targeted approaches with state-of-the-art instruments.

Learn more at www.caymanchem.com/lipidomics

Leukotrienes

Item No.	Product Name
500390	Cysteinyl Leukotriene ELISA Kit
20110	Leukotriene B ₄
520111	Leukotriene B ₄ ELISA Kit
22640	Leukotriene B ₄ Pathway MaxSpec® LC-MS Mixture
20410	Leukotriene E ₄
501060	Leukotriene E ₄ ELISA Kit

See all leukotrienes at www.caymanchem.com

Prostaglandins

Item No.	Product Name
19300	Primary Prostaglandin Metabolite MaxSpec® LC-MS Mixture
12010	Prostaglandin D ₂
512031	Prostaglandin D ₂ ELISA Kit
512011	Prostaglandin D ₂ -MOX ELISA Kit
514531	Prostaglandin E Metabolite ELISA Kit
14010	Prostaglandin E ₂
514010	Prostaglandin E ₂ ELISA Kit - Monoclonal
500141	Prostaglandin E ₂ Express ELISA Kit
19422	Secondary Prostaglandin Metabolite MaxSpec® LC-MS Mixture

See all prostaglandins at www.caymanchem.com

Cytokine & Transcription Factor Assay Kits

Cytokine Assays

Cytokines tailor the immune response, and the measurement of cytokines is fundamental in immunology and inflammation research. Cayman offers single-plex and multi-plex ELISA kits to study these critical inflammatory mediators.

See all cytokine assays at www.caymanchem.com

Transcription Factor Assays

Transcription factors are DNA-binding proteins that regulate gene expression. They are not only activated by cytokines but also regulate cytokines and other immune responses.

See all transcription factor assays at www.caymanchem.com

LipidLaunch™ Research Tools

Research-ready lipid nanoparticles (LNPs) and reagent kits.

Features:

- Encapsulate RNA in LNPs without specialized equipment
- Deliver RNA to hard-to-transfect cell lines and primary cell cultures
- Preserve cell viability
- Available in multiple formats

See all LipidLaunch™ products at www.caymanchem.com/lipidlaunch-guide



Tools to Target Cell Signaling Pathways

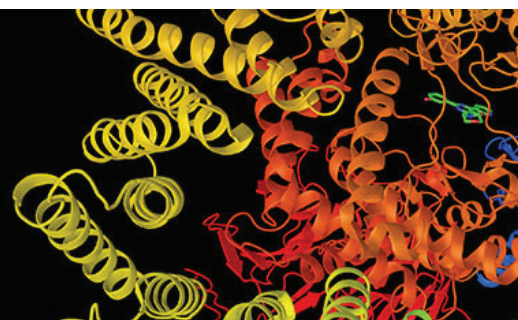
Kinase Inhibitors

Kinase signaling regulates myriad physiological processes from cellular proliferation, differentiation, and death to immune function, inflammation, and angiogenesis.

Explore Cayman's Kinase Resource Center for products, articles, and infographics for kinase research - all in one place.

- Kinase Inhibitors
- Growth Factor Signaling
- PI3K/Akt/mTOR Pathway
- MAPK Signaling Pathways
- JAK/STAT Signaling Pathway

Learn more at www.caymanchem.com/kinases



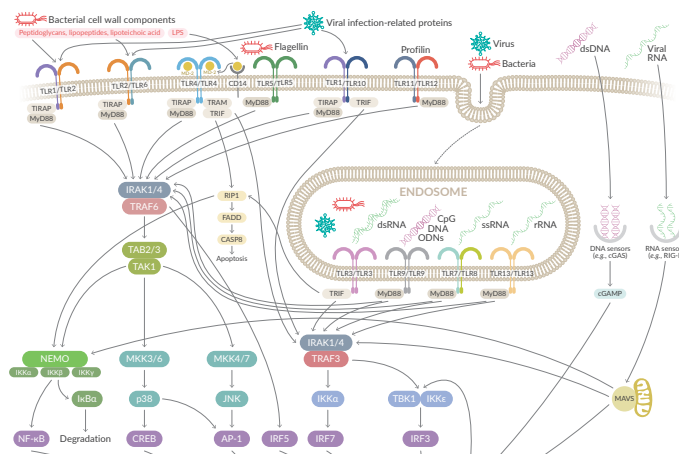
Receptor Pharmacology

Signal transduction cascades by cell surface and intracellular receptors mediate numerous biological processes.

Over 3,100 tools available from Cayman:

- Agonists
- Allosteric modulators
- Antagonists
- Inverse Agonists
- Cell-Based Reporter Assays

See all tools for receptor pharmacology at www.caymanchem.com



Innate & Adaptive Immunity Tools

The innate immune system is the first line of defense against invading pathogens and is non-specific, whereas the adaptive immune system is responsible for inducing antigen-specific immune responses.

Innate Immunity Tools

Phagocytosis Assay Kits

Item No.	Product Name
601370	<i>E. coli</i> Phagocytosis Assay Kit
601770	Efferocytosis Assay Kit
502710	Mouse IgG1 ELISA Kit
500290	Phagocytosis Assay Kit (IgG FITC)

See all phagocytosis assay kits at www.caymanchem.com

NETosis

Neutrophil extracellular traps (NETs) trap and immobilize pathogens, alert other immune cells to these pathogens, and have antimicrobial activity. Cayman empowers NETosis research with a suite of assays, biochemicals, and services.

See all netosis tools at www.caymanchem.com

Featured Assay

Netosis Assay Kit

Item No. 601010

- Induce and detect NET formation *in vitro*
- Elastase-based readout
- Non-dsDNA readout eliminates false positives from DNA
- Adaptable to multiple species

TLR Tools

Toll-like receptors (TLRs) are innate immune proteins that identify invading pathogens. They are pattern recognition receptors (PRRs) capable of recognizing specific pathogen-associated molecular patterns (PAMPs) and damage-associated molecular patterns (DAMPs).

TLR Agonists

Item No.	Product Name
14956	Imiquimod
19661	LPS from <i>Escherichia coli</i> O111:B4
22952	Motolimod
24126	Pam ₃ CSK ₄ (trifluoroacetate salt)
14806	R-848

Adaptive Immunity Tools

Antibody Assays

Item No.	Product Name
502520	Human IgA ELISA Kit
502530	Human IgE ELISA Kit
501240	Mouse IgG ELISA Kit
500840	Anti-Ovalbumin IgE (mouse) ELISA Kit
500830	Anti-Ovalbumin IgG1 (mouse) ELISA Kit
500410	Mouse Anti-Type II Collagen IgG Assay Kit (bovine)

MHC ELISAs

Item No.	Product Name
501810	HLA-DR (α and β chains) ELISA Kit
502060	MHC Class I (human) ELISA Kit

Antibody Therapeutic Development

- Detect human IgG antibodies in monkey, mouse, rat or rabbit plasma and serum
- Useful for pharmacokinetic analysis of therapeutic human IgG antibodies in monkeys
- Not cross reactive with rhesus or cynomolgus immunoglobulins

Item No.	Product Name
500910	Human Therapeutic IgG1 ELISA Kit
500960	Human Therapeutic IgG2 ELISA Kit
500920	Human Therapeutic IgG4 ELISA Kit

Immunoepitope Profiling

Identify MHC-presented neoantigens and evaluate immunogenicity with Cayman Services.

Learn more at www.caymanchem.com/immunoepitope

Tumor Immunology Tools

The innate and adaptive arms of the immune system can launch antitumor immune responses to limit cancer growth and progression. However, tumor cells can inhibit these responses and enable immune evasion.

Explore interactions of cancer cells with the immune system at our **Cancer Resource Center**.

We've built a portfolio of tools to study the tumor microenvironment, featuring:

- STING Signaling
- Adenosine Signaling
- Tumor Antigenicity

Learn more at www.caymanchem.com/cancer

Tools for Immunometabolism

Get a detailed view of immunometabolism by analyzing mitochondrial toxicity, function, and biogenesis, as well as glycolysis, metabolic substrate utilization, oxidative stress, and more.

Oxygen Consumption Rate Assay Kit

Item No. 600800

Measure OCR in living cells and mitochondria without an oxygen electrode.

MitoCheck® Assays

Measure the activity of complexes I-V of the electron transport chain with Cayman's MitoCheck® Assays.

View all MitoCheck® Assays at

www.caymanchem.com/mitocheck

Cellular Metabolism Analysis

Explore therapeutic avenues in various disease models using high-content imaging, enzymatic screening, and the Agilent Seahorse™ XF Pro.

- Mitochondrial biogenesis & function
- ROS generation & oxidative stress
- Immunometabolism studies
- Custom cellular models of disease

Learn more at www.caymanchem.com/cellmetabolism

Cell Health & Viability Tools

Evaluate the life or death of immune cells or the effectiveness of a therapeutic.

Cell Proliferation, Viability, & Cytotoxicity Tools

Item No.	Product Name
600120	7-AAD/CFSE Cell-Mediated Cytotoxicity Assay Kit
10009349	Cell Cycle Phase Determination Kit
10009853	CFSE Cell Division Assay Kit
32309	Ki-67 Rabbit Monoclonal Antibody (Clone RM360)
601170	LDH Cytotoxicity Assay Kit
10009365	MTT Cell Proliferation Assay Kit
10008883	WST-1 Cell Proliferation Assay Kit

CELL DEATH MECHANISMS & DETECTION TOOLS

How are your cells dying? Our guide can help you find out.

Download the guide at www.caymanchem.com/celldeath

Immunology Services

- NETosis Assays
- Immunological Screening
- Immunoepitope Profiling

Learn more at www.caymanchem.com/immunology