Cytokines - Master Regulators of the Immune System

CYTOKINE COMPENDIUM

DESIGNATED INTERLEUKINS (1-32)

Name	Other Names, MW, Structure	Source	Target Cell	Function	Species Specificity*	Receptor
IL-1α	LAF, MCF, ~17kDa, low MW forms present in serum (11, 4, 2kDa), 33kDa precursor cleaved to mature form; IL-1 family	variety of cells, IL-1β predominant in human, IL-1α in mouse	B, T, DC, monocytes	pleiotropic factor, stimulates T, B, NK, microglia, astroglia, modulate electrophysiological behavior of neurons	M ⇆ H	IL-1R Type I and II/CD121a and CD121b
IL-1β	IFN-β-inducing factor; OAF, Catabolin, ~17kDa; IL-1 family	variety of cells, expressed in brain	B, T, monocytes	pleiotropic factor, stimulates many cell types	M ⇆ H	IL-1R Type I and II/CD121a and CD121b
IL-1RAcP	60kDa, Ig family	distinct from IL-1R Type-1 and Type-2, expressed by many tissues	complex with the IL-1R Type-1 and IL-1α or IL-1-β but not with IL-1RA	-	-	-
IL-1RA	17kDa (soluble form); IL-1 family	macrophages, monocytes, neutrophils, fibroblasts	-	inhibits release of IL-1, inhibits IL-2 secretion, and inhibits expression of IL-2 receptors, blocks stimulation of PGE2.	-	-
IL-2	TSF, TCGF, 15kDa, bioactivity is glycosylation-independent; IL-2 family	activated lymphocytes	T, B, NK, LAK, monocytes, oligodendrocytes	expansion of activated lymphocytes, tumour surveillance	M ↔ H	IL-2R low affinity: CD25(p55; intermediate affinity: CD122/p75+CD132)$_\gamma$; high affinity: CD122+CD132/γ_c
IL-3	HCGF, MCGF, Multi-SCF, 15-17kDa, bioactivity is glycosylation-independent	activated T, monocytes, keratinocytes, NK, mast cells, endothelial cells	hematopoietic progenitor cells	hematopoiesis, chemoattractant for eosinophils, differentiation of early non-committed hematopoietic progenitor cells into many lineages, pre-B cell development	species specific	IL-3R low affinity: CD123 high affinity: CD123+CD131/β_c
IL-4	BCGF, BSF-1, ~13-14kDa, variation in bioactivity with different glycosylations	T helper, mast cells and basophils	B, T, monocytes, endothelial cells	B cell help, promotes production of IgG1 and IgE, T helper subset regulation; alternative splice variant IL-4δ2 (no exon 2) is an IL-4 antagonist	species specific	IL-4R CD124+CD132/γ_c; receptor also in soluble form
IL-5	BCGF-2, BCDF, Eo-CSF, 30-40kDa, homodimer	T cells, mast cells, eosinophils	Eosinophils, basophils	growth and differentiation of eosinophils, promotes B cell activation and production of IgM and IgA	M ↔ H M ← H (weak)	IL-5R CD125+β$_c$
IL-6	BCSF, IFN-β2, different MW due to modifications, 21.5-28kDa, 42-45kDa in serum complexed with α2-microglobulin	T, B, stimulated monocytes, fibroblasts, and endothelial cells, BM stromal cells, present in milk and in synovial fluid of rheumatoid arthritis patients	T & activated B cells, peripheral blood monocytes	inflammation, mediator of acute phase reaction, T cell growth, neuron growth, maturation of B cells to plasma cells, development of trophoblasts	M ↔ H	CD126+CD130/gp130, receptor also in soluble form
IL-7	PBGF, LP-1, 15kDa; IL-2 family	BM and thymus stromal cells, keratinocytes	T and B progenitor cells, megakaryocytes	pre-B cell development, megakaryocyte maturation, immature and mature T cell growth	M ⇆ H	CD127+γ_c; receptor in soluble form
IL-8	CXCL8, NAP-1, 8kDa , non-glycosylated, variants, dimer	activated monocytes, fibroblasts, endothelial cells	lymphocytes, neutrophils	neutrophil activation, chemotaxis, anti-inflammatory	no mouse homologue	CXCR1 and CXCR2/CD128 type I and II
IL-9	MCGF, 14kDa	activated Th2, Hodgkin's lymphoma	T, erythroid progenitor	promotes mast cell growth (w/ IL-3), promotes B cell growth (w/ IL-4)	M → H	CD129, receptor also in soluble form
IL-10	CSIF, TGIF, ~18kDa, homodimer, IL-10 family	Th2 (m), B1 (m), keratinocytes (m), activated CD8 and CD4 (h)	macrophages, mast & B cells, fibroblasts, granulocytes, eosinophils	immune inhibitory role, chemoattractant for CD8 T cells, costimulator for thymocytes and mast cells	M ↔ H	CD210
IL-11	megakaryocyte CSF, 23kDa, non-glycosylated	BM stromal cells, mesenchymal cells	hematopoietic stem cells	megakaryocytopoiesis, inhibits the differentiation of pre-adipocytes	M ⇆ H	NR1+CD130
IL-12 p70	NKSF, TSF, 70kDa (40 and 35 subunits), heterodimer	monocytes, macrophages and dendritic cells	T, NK cells	regulates cell-mediated immune response, stimulates NK activity; induces IFN-γ production, cell proliferation, and cytotoxicity mediated by natural killer & T cells; induces Th1 responses	M → H	CD212
IL-12 p40 homodimer	p40 homodimer	monocytes, macrophages and dendritic cells	macrophages	macrophage chemotaxis, proinflammatory, antagonist to IL-12 p70.	-	IL-12R B1
IL-13	NC30, p600, 12.5kDa	Th2 (m), activated CD8 and Th CD4 (h), mast cells, NK cells	monocytic lineage, B cells	inhibits macrophage cytotoxic activity, upregulates IL-1RA expression, suppresses inflammatory cytokine expression; induces CD23 expression on B cells and enhances expression of CD72 and class II MHC gene products	M ⇆ H	IL-13Rα + CD132/γ_c
IL-14	HMW-BCGF (60K-BCGF and Namalwa BCGF); homology to the complement factor Bb activation fragment	T cells and some T cell and B cell lines following stimulation with PHA	B cells	mitogen for activated B cells; inhibits immunoglobulin secretion and selectively expands certain B cell subpopulations	-	receptor is expressed on activated, but not resting, B cells
IL-15	IL-T, 14-15kDa; IL-2 family	human fetal astrocytes and microglia in response to IL-1β, IFN-γ, or TNF-α	monocytes, NK cells and PHA-activated PBMCs	some activities similar to IL-2; NK maturation; role in T cell mediated immune responses in the human central nervous system; induce generation of cytolytic cells and LAK cells activity in vitro	-	IL-15Rα + CD122 + CD132
IL-16	LCF	activated CD8+ T cells, fibroblasts, eosinophils, mast cells, and lung epithelium. Inducible with IL-1β or histamine stimulation	T cells	chemoattractant for CD4+ T cells, macrophages, and eosinophils; suppresses HIV replication	-	CD4
IL-17	CTLA-8, 15-25kDa, homodimer	CD4+ memory T cells	stromal cells, endothelial and epithelial, fibroblasts	angiogenesis, neutrophil maturation	M ← H	HVS13R/ CD217
IL-18	IGIF, 24kDa, non-glycosylated 18kDa bioactive by caspase 1; IL-1 family	variety of cell types	T cells	pro-inflammatory cytokine, supports Th1 cells, role in angiogenesis; induces IFN-γ production by T cells and NK cells	M ⇆ H	IL-18Rα/CD218 + IL-18Rβ + IL-18BP
IL-19	monomer, IL-10 family	activated monocytes, B cells	monocytes, activated T cells	induces IL-6 and TNF-α by monocytes; induces apoptosis and reactive oxygen species by monocytes; induces IL-4, IL-5, IL-10, IL-13 production by activated T cells, potential role in the pathogenesis of asthma.	M → H	shares receptor with IL-20 and IL-24; CRF2-8 (or IL-20R1) and CRF2-11 (or IL-20R2), belonging to the class II cytokine receptor family
IL-20	IL-10 family	monocytes, keratinocytes	keratinocytes	autocrine factor regulating keratinocyte function, differentiation, proliferation	-	IL-20R1 and IL-20R2 or IL-22R1 and IL-20R2
IL-21	IL-2 family	activated CD4 T cells	NK, T and B cells, dendritic cells	costimulates B cell proliferation with CD40; T and NK stimulation; stimulates proliferation of bone marrow progenitor cells	-	IL-21R/NILR + γ_c
IL-22	IL-TIF, 25kDa, homodimer or monomer, IL-10 family	NK cells and CD4+ Th1 cells; induced by IL-9 in thymic lymphomas, T cells and mast cells	-	pro-inflammatory; induces synthesis of acute phase proteins	-	CRF2-4 + IL-10R2
IL-23	heterodimer IL-12p40 and p19	activated DC	mouse memory T and human T cells	pro-inflammatory; proliferation of memory (but not naïve) T cells and induction of IL-17 by memory T cells in mouse; induces proliferation of memory T cells and induces moderate levels of IFN-γ production by naive and memory T cells in human	M ⇆ H	IL-23R + IL-12Rβ1
IL-24	ST16, MDA-7, FISP, 35kDa, IL-10 family	Th2 cells (mouse), melanocytes, breast epithelium, fibroblasts (rat), monocytes, vascular smooth muscle, NK, B, naïve T cells	-	megakaryocyte differentiation, induces apoptosis of human breast cancer cells, induces IL-6 and TNF-α by monocytes	-	shares receptor with IL-20 and IL-19
IL-25	SF20, IL-17 family	BM stromal cells; polarized Th2 cells (not naïve T cells)	lineage-negative cells with high MHC class II level	supports proliferation lymphocytes, signature Th2 effects: induces serum IgG1 and IgE, increases eosinophil production and inflammation; mediates effect through induction of IL-4, IL-5, IL-13	-	thymic shared antigen TSA-1
IL-26	AK155, 36kDa, homodimer, IL-10 family	CD4 CD45RO T cells, NK cells, Th1 cells	epithelial cells	induces secretion of IL-8, IL-10 and expression of CD54	-	IL-20R1 and IL-10R2
IL-27	heterodimer of p28/IL-30 and EBI3	mature DC	NK cells and naïve CD4+ T cells	induces proliferation of naïve but not memory CD4+ T cells; initial activator of Th1 responses (induces T-bet; downregulates GATA-3)	-	WSX-1/T cell cytokine receptor (TCCR) and gp130
IL-28A	IFN-λ1, related to IL-10 and type 1 IFNs	plasmacytoid dendritic cells, induced by virus infection or dsRNA	majority of tissues, except brain and spinal cord	anti-viral activity (inhibits replication of Hep B and Hep C viruses); induces oligoadenylate synthetase and MxA; upregulates class I MHC	-	shares receptor with IL-29B and IL-29; IL-28Rα/IFN-λR1 and IL-10Rβ
IL-28B	IFN-λ2, related to IL-10 and type 1 IFNs	plasmacytoid dendritic cells, induced by virus infection or dsRNA	majority of tissues, except brain and spinal cord	anti-viral activity (inhibits replication of Hep B and Hep C viruses); induces oligoadenylate synthetase and MxA; upregulates class I MHC	-	shares receptor with IL-28A and IL-29; IL-28Rα/IFN-λR1 and IL-10Rβ
IL-29	IFN-λ3, related to IL-10 and type 1 IFNs	plasmacytoid dendritic cells, induced by virus infection or dsRNA	majority of tissues, except brain and spinal cord	anti-viral activity (inhibits replication of Hep B and Hep C viruses); induces oligoadenylate synthetase and MxA; upregulates class I MHC	-	shares receptor with IL-28A and B; IL-28Rα/IFN-λR1 and IL-10Rβ
IL-30	p28, a subunit of IL-27	activated APC	NK cells and naïve CD4+ T cells	-	-	-
IL-31	four-helix bundle, 24kDa, alpha-helical cytokine family	activated T cells	activated monocytes, epithelial cells	allergic reaction, dermatitis	-	IL-31 receptor A and oncostatin M receptor
IL-32	NK4, TAIF, different isoforms: -α, -β, -δ, and IL-32-γ, the longest variant; no sequence homology with known cytokine families	activated T and activated NK cells; IL-18-primed lung carcinoma cell line; mitogen-activated lymphocytes (human), IFN-γ-treated epithelial cells (human); IL-12/IL-18 treated NK cells	macrophages, RAW, A549	inflammatory; induces the production of TNF-α, IL-8, and MIP-2	-	-
IL-33	NF-HEV, C9ORF26; IL-1 Family, 32kDa	variety of cell types, endothelial cells	T cells	drives Th2 differentiation and IL-4, IL-5 and IL-13 secretion, transcription repressor/nuclear factor, associates with heterochromatin	-	ST2
IL-34	FPT025; 242 amino acids; secreted with signal peptide/no sequence homology to known cytokines	human spleen, skin, brain	human primary monocytes	activates ERK1/2 phosphorylation in monocytic THP-1 cell line; promotes bone marrow granulocyte and monocyte colony formation (CFU-GM, CFU-M); upregulates myeloid surface markers	-	-

* **Species Specificity Key:**

M ⇆ H = mouse protein active on human cell; human protein active on mouse cell

M → H = mouse protein active on human cell

M ← H = human protein active on mouse cell

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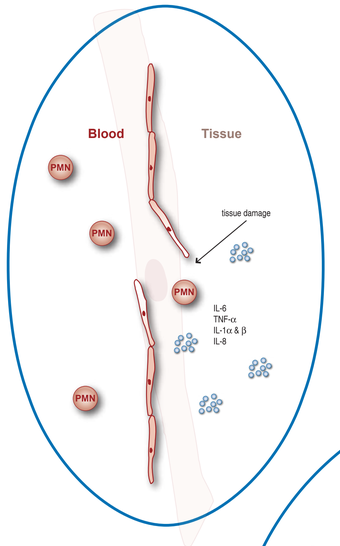
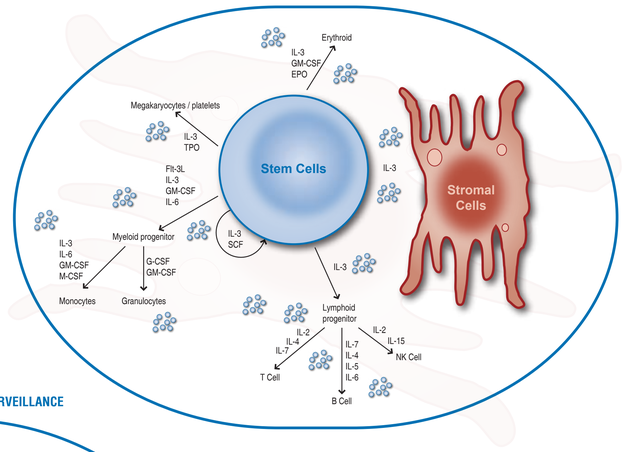
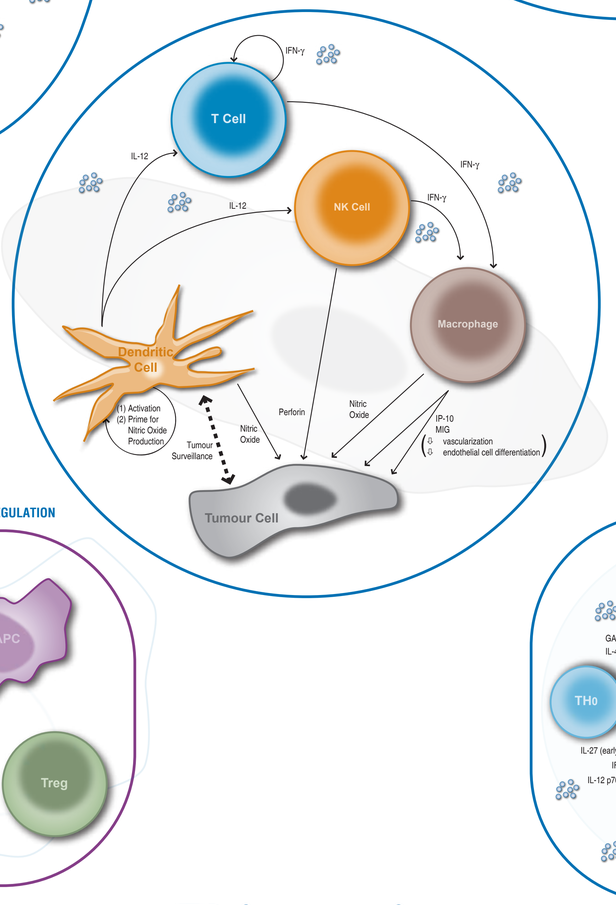
CYTOKINES IN INFLAMMATION AND TISSUE DAMAGE



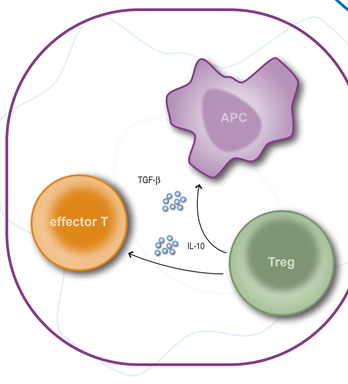
CYTOKINES IN HEMATOPOIESIS



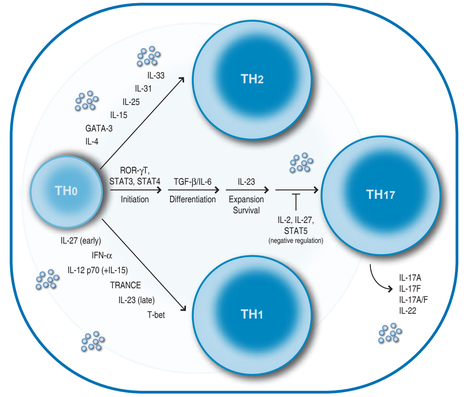
CYTOKINES IN TUMOUR SURVEILLANCE



CYTOKINES IN IMMUNE REGULATION



CYTOKINES IN T CELL DIFFERENTIATION



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OVERVIEW

Cytokines – Emerging Roles in Cancer, Hematopoiesis, Inflammation, and Immune Regulation

Cytokines are a diverse family of soluble immunomodulatory proteins and peptides which act as humoral regulators and which, either under normal or pathological conditions, modulate the functional activities of individual cells and tissues. Cytokines enable communication between cells, controlling cellular proliferation, differentiation and function. Cytokines are rapidly synthesized following cellular activation and are secreted by many different cell types in response to a variety of stimuli. Cytokines are pleiotropic in their biological activities and play pivotal roles in a variety of host responses, including immune regulation, tumour surveillance, inflammation and tissue repair, hematopoiesis, and T cell subset differentiation. A majority of cytokine signaling is mediated by "shared" receptors that form multi-molecular complexes incorporating ligand-specific and signal-transducing receptors; the mode of action can be additive, synergistic, or antagonistic in manner. This poster reviews the sources, targets & functions of cytokines with designated interleukin (IL) nomenclature.

EBIOSCIENCE PRODUCTS

Cytokine & Chemokine Receptors

Common and novel cytokine and chemokine receptors, including CXCR4 & CCR7.

Antigen	Mouse	Human
BAMBI	-	4E8
CCL19	Fusion protein	-
CD25/IL-2Rα	PC61.5, eBio7D4, eBio3C7	BC96
CD115/M-CSF	AFS98	12-3A3-1B10
CD116/GM-CSFRα	-	4H1
CD117 (c-Kit)	2B8, ACK2	YB5.B8
CD122/IL-2Rβ	5H4, TM-b1	-
CD123/IL-3Rα	5B11	6H6
CD124/IL-4Rα	-	X24/6-12
CD127/IL-7Rα	A7R34	eBioRDR5
CD135 (Flk-2/Flt-3)	A2F10	BV10A4H2
CD140a/PDGFRα	APA5	-
CD140b/PDGFRβ	APB5	-
CD184/CXCR4	eBiomCXCR4, Polyclonal	2B11/CXCR4, 12G5, Polyclonal
CD195/CCR5	HM-CCR5 (7A4)	eBioT21/8, R23/7, V1A2
CD197/CCR7	4B12	3D12, CCR7.6B3
CDw198/CCR8	-	Polyclonal
CDw199/CCR9	eBioCW-1.2	-
CDw218a/IL-18Rα	-	H44
CMKLR1	-	BZ332
EGFR	Polyclonal	Polyclonal
IL-1RAcP	-	Polyclonal
IL-8Rα/CXCR1	-	eBio8F1-1-4
IL-8Rb/CXCR2	-	eBioSE8-C7-F10
IL-15Rα	mAb	eBioJM7A4
IL-21R	eBio4A9	-
IL-22R	-	Polyclonal
IL-27R	-	Polyclonal
Lymphotoxin-β R	eBio3C8	-
VEGF-R2/Flk-1	Avas12a1	-
VEGF-R3	AFL4	-

Ready-SET-Go! ELISA Sets & Kits

Ready-SET-Go! ELISA Sets & Kits contain all the necessary antibodies, standards, buffers, and diluents for performing quantitative, enzyme-linked, immunosorbent assays (ELISA). ELISA kits come with precoated ELISA plates, while ELISA sets come with or without high-affinity binding microwell plates.

Description	ELISA Set		ELISA Kits	
	Mouse	Human	Mouse	Human
GM-CSF	88-7334	-	-	-
Granzyme B	88-8022	-	-	-
IFN-γ	88-7314	88-7316	88-7914	88-7916
IFN-γ (high sensitivity)	88-8314	-	88-8344	-
IL-1β	88-7013	88-7010	-	88-7910
IL-2	88-7024	88-7026	88-7924	88-7926
IL-4	88-7044	88-7046	88-7944	88-7946
IL-5	88-7054	88-7056	-	-
IL-6	88-7064	88-7066	88-7964	88-7966
IL-10	88-7104	88-7106	88-7904	88-7906
IL-12 (p40 total)	88-7120	-	88-7922	-
IL-12 (p35/p40)	88-7121	88-7126	88-7921	88-7929
IL-13	88-7137	-	-	-
IL-15	88-7150	-	-	-
IL-17A	88-7371	88-7176	88-7971	88-7976
IL-23 (p19/p40)	88-7234	88-7237	88-7231	88-7239
IL-29	88-7296	-	-	-
MCP-1 (CCL2)	88-7391	88-7399	-	-
TGF-β1	88-7344	88-7344	88-7449	88-7449
TNF-α	88-7324	88-7346	88-7342	88-7347
TNF-β	-	88-7345	-	-

Cell Surface Markers

Common and novel cell surface markers.

Antigen	Mouse	Human
CD1d	1B1	-
CD3	-	OKT3, UCHT1, HIT3a
CD3e	145-2C11, 17A2	-
CD4	GK1.5, RM4-5, RM4-4	OKT4, RPA-T4
CD8	53-6.7, eBioH35-17.2, CT-CD8b	OKT8, RPA-T8, HIT8a
CD25	PC61.5, eBio7D4, eBio3C7	BC96
CD26	-	2A6
CD28	37.51	CD28.6 (blocking), CD28.2 (costimulatory)
CD30	mCD30.1	-
CD56	-	MEM188
CD62L	MEL-14	DREG56
CD69	H1.2F3	FN50
CD81	Eat-2	-
CD94	18d3	DX22
CD103	2E7	B-Ly7
CD161/NK1.1	PK136	-
CD244	eBio244F4	eBioPP35, eBioDM244, eBioC1.7
CD254/TRANCE	IK22/5	MIH23, MIH24
CD278/ICOS	7E.17G9, C398.4A, 15F9	ISA-3
GITR/AITR	DTA-1	eBioAITR
GITR-L/AITR-L	eBioYGL386	eBioAITR-L
HLA-ABC	-	W6/32
HLA-DR	-	LN3
IgD	11-26c, polyclonal (activating)	-
MHC class I	34-1-2S, 28-14-8	-
MHC class II	NIMR-4, M5/114.15.2 (I-A/I-E), 14-4-4S (I-Ek)	-
NKG2D	CX5 (blocking), M6 (blocking), A10 (activating), C7 (blocking)	1D11 (activating), 5C6 (activating)
T-bet	eBio4B10, eBio39D	eBio4B10, eBio39D
TCR αβ	-	IP26
TCRb	H57-597	-
TCR γδ	GL3, UC7-13D5	B1.1
Tim-1	RMT1-4, RMT1-10	-
Tim-3	8B.2C12, RMT3-23	-

Recombinant Cytokines

Using the latest techniques in insect cell expression or bacterial fermentation methods, final proteins have native conformation and high specific activity for bioassay, *in vitro* & *in vivo* experiments, and as standards in ELISA or other immunological assay. Available with carrier, carrier-free and as a 4-pack of single-use ELISA standards.

Description	Mouse	Human	Rat
Flt-3/Flk-2 Ligand	-	8358	-
GM-CSF	8331	8339	-
HGF	8431	8439	-
IFN-α1	-	8318	-
IFN-γ	8311	8319	8315
IL-1α	8011	8019	-
IL-1β	8012	8018	8010
IL-2	8021	8029	8020
IL-3	8331	-	-
IL-4	8041	8049	8040
IL-5	8051	8059	-
IL-6	8061	8069	8060
IL-7	8071	8079	-
IL-8	-	8089	-
IL-10	8101	8109	-
IL-12 (p40 monomer)	8122	8128	-
IL-12 (p40 homodimer)	8123	-	-
IL-12 (p35/p40)	8121	8129	-
IL-13	8131	8139	-
IL-15	8151	8159	-
IL-17A	8171	8179	-
IL-17F	8471	8479	-
IL-19	-	8199	-
IL-23 (p19/p40)	8231	8239	-
IL-27	8271	8279	-
IL-28	8281	-	-
IL-29	-	8299	-
SCF	8341	8349	-
TGF-β1	-	8348	-
Tim-1 Fc	5860	-	-
Tim-3 Fc	5771	-	-
TNF-α	8321	8329	8320
TWEAK	-	8916	-
VEGF	8351	8359	-

ELISA Antibody Pairs & Standards

For the detection and quantification of cytokines secreted into tissue culture supernatants, these sandwich ELISAs use two antibodies specific for non-competing epitopes and enable specific capture and detection of the target cytokine.

Mouse	Capture mAb	Detection mAb	Standard
GM-CSF	MP1-22E9	14-7331, MP1-31G6	13-7332	39-8331-65
IFN-γ (high sensitivity)	AN-18	14-7313, R4-6A2	13-7312	39-8311-65
IFN-γ	XMG1.2	14-7311, R4-6A2	13-7312	39-8311-65
IL-1α	ALF-161	14-7011 Polyclonal	13-7111	39-8011-65
IL-1β	B122	14-7012 Polyclonal	13-7112	39-8012-65
IL-2	JES6-1A12	14-7022 JES6-5H4	13-7021	39-8021-65
IL-4	11B11	14-7041 BVD6-24G2	13-7042	39-8041-65
IL-5	TRFK5	14-7052 TRFK4	13-7051	39-8051-65
IL-6	MP5-20F3	14-7061 MP5-32C11	13-7062	39-8061-65
IL-10	JES5-16E3	14-7101 JES5-2A5	13-7102	39-8101-65
IL-12 (p40 total)	C15.6	14-7125 C17.8	13-7123	39-8122-65
IL-12 (p70)	C18.2	14-7123 C17.8	13-7123	39-8121-65
IL-13	eBio13A	14-7133 eBio1316H	13-7135	39-8131-65
IL-17A	eBio17CK15A5	14-7175 eBio17B7	13-7177	39-8171-65
IL-23	G23.8	14-7232 C17.8	13-7123	39-8231-65
LAG-3/sCD223	eBioC9B7W	14-2231 Polyclonal	24-2232	please inquire
MCP-1/CCL2	4E2	14-7091 2H5	13-7096	please inquire
TNF-α	TN3-19.12	14-7423 Polyclonal	13-7341	39-8321-65
TNF-α	1F3F3D4	14-7325 Polyclonal	13-7341	39-8321-65

Human	Capture mAb	Detection mAb	Standard
IFN-γ	NIB42	14-7318, 4S.B3	13-7319	39-8319-65
IFN-γ	MD-1	14-7317, 4S.B3	13-7319	39-8319-65
IL-1α	CRM8	14-7019 CRM5	13-7017	39-8019-65
IL-1α	364/3B3-14	14-7118 CRM5	13-7017	39-8019-65
IL-1β	CRM56	14-7018, CRM57	13-7016	39-8018-65
IL-1RA	CRM17	14-7015 Polyclonal	13-7018	please inquire
IL-2	MQ1-17H12	14-7029 Polyclonal	13-7028	39-8029-65
IL-4	8D4-8	14-7049 MP4-25D2	13-7048	39-8049-65
IL-5	TRFK5	14-7052 JES1-5A10	13-7059	39-8059-65
IL-6	MQ2-13A5	14-7069 MQ2-39C3	13-7068	39-8069-65
IL-10	JES3-9D7	14-7108, JES3-12G8	13-7106	39-8129-65
IL-12 (p40 monomer)	C8.3	14-7127 C8.6	13-7129	39-8128-65
IL-12 (p70)	B-T21	14-7128 C8.6	13-7129	39-8129-65
IL-13	PVM13.1	14-7139 Polyclonal	13-7138	39-8139-65
IL-17A	eBio64DEC17	14-7178 eBio64DEC17	14-7179	39-8179-65
IL-23	eBio473P19	14-7238 C8.6	13-7129	39-8239-65
MCP-1/CCL2	5D3-F7	14-7099 2H5	13-7096	please inquire
TNF-α	MAb1	14-7348 MAb11	13-7349	39-8329-65
TNF-β	359-238-8	14-7329 359-81-11	13-7327	please inquire
TRANCE/RANK-L	MIH23	14-6617 MIH24	13-6619	-
TWEAK	CARL-2	14-9916 CARL-1	13-9915	-

Ready-SET-Go! ELISPOT Sets

Ready-SET-Go! ELISPOT sets contain the necessary reagents for performing enzyme linked immunosorbent spot (ELISPOT) assays for high resolution frequency analysis of cytokine producing cells.

Description	Mouse	Human
Granzyme B	see website	88-8399
IFN-γ	88-7384	88-7386
IL-1α	88-7813	-
IL-1β	-	88-7810
IL-2	88-7824	-
IL-4	88-7844	88-7849
IL-5	88-7825	88-7859
IL-6	88-7864	88-7869
IL-10	88-7804	88-7809
IL-12 p70	-	88-7879
IL-13	88-7834	88-7839
IL-17A	88-7370	88-7876
TNF-α	88-7328	88-7398