Bender MedSystems®

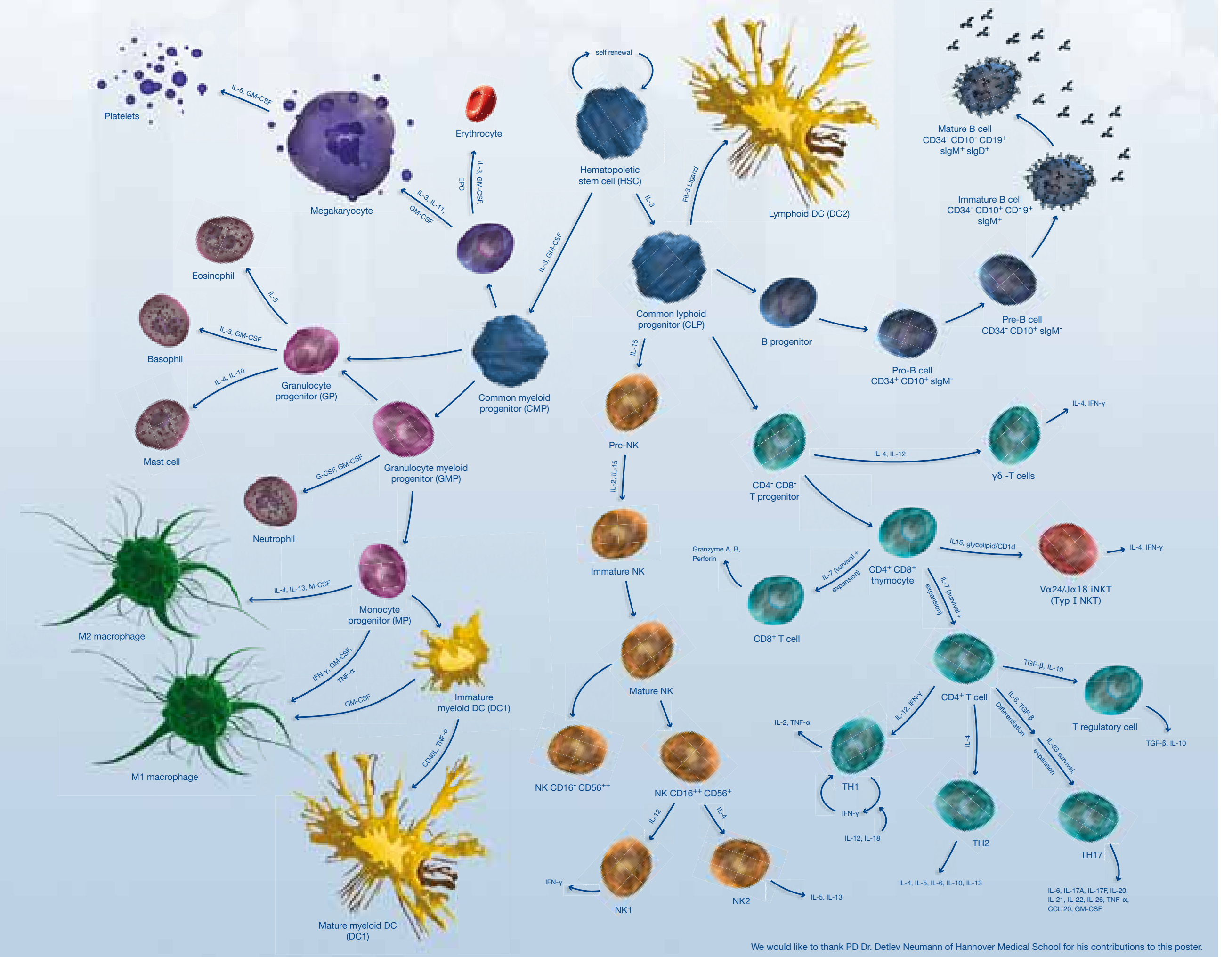
Hematopoiesis

+ Europe - Headquarters
Bender MedSystems GmbH
Campus Vienna Biocenter 2
1030 Vienna, Austria
phone: +43 1 796 40 40-0
fax: +43 1 796 40 40-400
free phone: 00 800 2363 3763

customerserv@bendermedsystems.com
techserv@bendermedsystems.com

+ USA
Bender MedSystems Inc.
849 Hinckley Road
Burlingame, CA 94010
phone: (650) 952 2112
fax: (650) 952 2252
toll-free phone: 1-866 952 2112
toll-free fax: 1-877 952 2112

uscustomerserv@bendermedsystems.com
ustechserv@bendermedsystems.com



We would like to thank PD Dr. Detlev Neumann of Hannover Medical School for his contributions to this poster.

COMPENDIUM AND ASSOCIATED BENDER MEDSYSTEMS PRODUCTS

Analyte	Synonyms	Major source	Major target	Selected functions	Receptor	Cat. No.	Product format
Erythropoietin (EPO)	ECSA, ESF	peritubular capillary kidney epithelium, liver hepatocytes	bone marrow erythroid precursors, megakaryocytes, endothelial cells, B	erythrocyte differentiation, megakaryocytopoiesis, chemoattractant for endothelial cells	EpoR homodimer	BMS2002	Conventional ELISA
CCL20	MIP-3α, Exodus-1, LARC	epithelial cells, keratinocytes	immature DC, T, B	inflammatory and homeostatic chemokine, recruitment of T and B	CCR6	-	-
sCD40L	CD154	CD4⁺ T, platelets, monocytes, NK, B, CD8⁺ T, mast cells, basophils	B	CD40/CD40L interaction affects immune cell activation, differentiation, proliferation, and apoptosis, upregulation of costimulatory molecules and FasL, production of cytokines and angiogenic factors	CD40	BMS239, BMS6010 BMS293 BMS239INST BMS239MST BMS8239/2FF BMS811/2FF, BMS816FF	Conventional ELISA Highly Sensitive ELISA Instant ELISA® Matched Antibody Pairs FlowCytomix™ Simplex FlowCytomix™ Multiplex
G-CSF	Pluripoietin-β	activated monocytes, macrophages, neutrophils, stromal cells, fibroblasts, endothelial cells, epithelial carcinomas, AML cells, various tumor cell lines	neutrophil and granulocyte progenitor cells, monocytes, macrophages, T, DC	pleiotropic, proliferation and differentiation of neutrophil and granulocyte progenitor cells, phagocytosis, cytokine production, multiple effects on adaptive immune responses	CD114 (at least 4 splice variants in humans)	BMS2001INST BMS82001FF BMS813FF	Instant ELISA® FlowCytomix™ Simplex FlowCytomix™ Multiplex
GM-CSF	Pluripoietin-α	activated T, macrophages, fibroblasts, endothelial cells	granulocyte and macrophage progenitor cells, monocytes, macrophages, eosinophils, basophils, B	pleiotropic, growth and development of granulocyte and macrophage progenitor cells, monocyte survival, induces chemotaxis of eosinophils, enhances macrophage functions	GMR-α + GMR-β / CD131 ($β_C$)	BMS283, BMS612, BMS633 BMS283INST BMS612MST BMS8612FF, BMS8633FF BMS820FF, BMS821FF, BMS825FF	Conventional ELISA Instant ELISA® Matched Antibody Pairs FlowCytomix™ Simplex FlowCytomix™ Multiplex
Granzyme A	-	cytotoxic T, NK	virally infected or transformed cells	apoptosis induction (induction of single-stranded DNA damage and rapid loss of cell membrane integrity and mitochondrial transmembrane potential)	-	BMS2026	Conventional ELISA
Granzyme B	-	cytotoxic T, NK	virally infected or transformed cells	apoptosis induction (cleavage of caspase-3 and -8)	-	BMS2027	Conventional ELISA
IFN-γ	Antigen-induced IFN, Immune IFN, Type 2 IFN	T, B, NK	T, B, monocytes, macrophages, smooth muscle cells, endothelial cells, myofibroblasts, transformed cells	mainly immunomodulatory, antiviral -antiparasitic, antiproliferative, involved in bone growth and bone resorption	a number of IFN-γ binding proteins on all types of human cells	BMS228, BMS606, BMS621, BMS671 BMS228HS BMS228INST, BMS606INST BMS228MST, BMS606MST, BMS621MST, BMS671MST BMS8228FF, BMS8606/2FF, BMS8621FF BMS810FF, BMS820FF, BMS825FF BMS228ES	Conventional ELISA High Sensitivity ELISA Instant ELISA® Matched Antibody Pairs FlowCytomix™ Simplex FlowCytomix™ Multiplex ELISpot
IL-1α	LAF, MCF	mainly keratinocytes, many other cell types	T helper, B, NK, neutrophils, monocytes, many others	IL-1α and IL-1β are equivalent pleiotropic factors, stimulate Th cells, promote proliferation and activation of many cell types. Antiproliferative and cytotoxic activity on certain tumor cell types, mediator of inflammation, chemoattractant for leukocytes	IL-1 Type 1 receptor / CD121a IL-1 Type 2 receptor / CD121b	BMS243/2, BMS611, BMS627 BMS611INST BMS243/2MST, BMS611MST BMS8611FF, BMS8627FF BMS820FF, BMS825FF	Conventional ELISA Instant ELISA® Matched Antibody Pairs FlowCytomix™ Simplex FlowCytomix™ Multiplex
IL-1β	OAF, catabolin	mainly monocytes, many other cell types, expressed constitutively in the brain	see IL-1α above	see IL-1α above	see IL-1α above	BMS224/2, BMS6002, BMS630, BMS645 BMS224HS BMS224INST BMS224/2MST BMS8224FF BMS810FF	Conventional ELISA High Sensitivity ELISA Instant ELISA® Matched Antibody Pairs FlowCytomix™ Simplex FlowCytomix™ Multiplex
IL-2	TSF, TCGF	activated lymphocytes	T, B, NK, LAK, monocytes, oligodendrocytes	promotes proliferation of activated T, central mediator of immune responses, anti-inflammatory, role in hematopoiesis and tumor surveillance	IL-2Rα / CD25 IL-2Rβ / CD122	BMS221, BMS601, BMS634, BMS643 BMS221HS BMS221INST, BMS601INST BMS601MST BMS8221FF, BMS8601FF BMS810FF, BMS820FF BMS601ES	Conventional ELISA High Sensitivity ELISA Instant ELISA® Matched Antibody Pairs FlowCytomix™ Simplex FlowCytomix™ Multiplex ELISpot
IL-3	HCGF, MCGF, Multi-SCF	activated T, monocytes, NK	hematopoietic progenitor cells, mast cells, macrophages	biological activities are species-specific, proliferation and development of most hematopoietic progenitor cells, proliferation of mast cells and macrophages, synthesis of histamines by mast cells, induces phagocytosis by macrophages	IL-3Rα / CD123 IL-3Rβ / CD131($β_C$)	-	-
IL-4	BCGF, BSF-1	T helper (mainly Th2), mast cells	B, T, NK, human alveolar macrophages	proliferation and activated B, induction of MHC-II and low affinity IgE in resting B	3 domains: extracellular (CD124) transmembrane intracellular (also secreted) + CD132 ($γ_C$)	BMS225/2, BMS613, BMS8628 BMS225HS BMS225INST, BMS613INST BMS225/2MST, BMS613MST BMS8225FF, BMS8613FF, BMS8628FF BMS810FF, BMS820FF, BMS825FF	Conventional ELISA High Sensitivity ELISA Instant ELISA® Matched Antibody Pairs FlowCytomix™ Simplex FlowCytomix™ Multiplex
IL-5	BCGF-2, BCDF, Eo-CSF	T	eosinophils, thymocytes, B (mouse only)	growth and differentiation of eosinophils, generation of cytotoxic T from thymocytes; in mouse: proliferation and differentiation of B, IgM and IgA production by B	CD125 + CD131 ($β_C$)	BMS278, BMS610 BMS278INST BMS278MST, BMS610MST BMS8278FF, BMS8610FF BMS810FF, BMS820FF	Conventional ELISA Instant ELISA® Matched Antibody Pairs FlowCytomix™ Simplex FlowCytomix™ Multiplex
IL-6	BCSF, IFN-β2	mainly monocytes, fibroblasts, endothelial cells, various cell types upon stimulation, present in human milk	B, T, plasma cells, thymocytes, hepatocytes, neurons, various tumor cells	pleiotropic cytokine, influences antigen-specific immune responses and inflammatory reactions, mediator of acute phase reactions, B differentiation, T activation, proliferation of thymocytes, autocrine growth modulator of some tumor types, growth inhibition of some solid tumors	CD126 + CD130 / gp130 (also secreted)	BMS213/2, BMS603, BMS625, BMS641/2 BMS213HS BMS213INST, BMS641INST BMS213/2 MST, BMS603MST, BMS625MST, BMS641/2MST BMS8213FF, BMS8603FF BMS810FF, BMS811/2FF, BMS816FF, BMS820FF	Conventional ELISA High Sensitivity ELISA Instant ELISA® Matched Antibody Pairs FlowCytomix™ Simplex FlowCytomix™ Multiplex
IL-7	PBGF, LP-1	bone marrow stromal cells, thymic cells, keratinocytes	pre-B and pro-B, NK, T, monocytes	proliferation of pre-B and pro-B, maturation of megakaryocytes, proliferation of activated T, T differentiation, induction of inflammatory mediators from monocytes	CD127 (also secreted) + CD132 ($γ_C$)	BMS237INST	Instant ELISA®

Analyte	Synonyms	Major source	Major target	Selected functions	Receptor	Cat. No.	Product format
IL-8	CXCL8, NAP-1	stimulated monocytes, macrophages, fibroblasts, endothelial cells, keratinocytes, various cell types	neutrophils, B, migratory cells	activation of neutrophil granulocytes, chemotactic for all migratory immune cells, enhances expression of adhesion molecules, inhibits Ig production, anti-inflammatory, supports angiogenesis	IL-8Rα: CXCR1 / CD181 IL-8Rβ: CXCR2 / CD182	BMS204/3, BMS640/3 BMS204/3INST, BMS640/3INST BMS204/3MST BMS8204FF BMS810FF, BMS811/2FF, BMS813FF	Conventional ELISA Instant ELISA® Matched Antibody Pairs FlowCytomix™ Simplex FlowCytomix™ Multiplex
IL-10	CSIF, TGIF	mouse: Th2, Ly1-B, keratinocytes human: activated CD4⁺ T and CD8⁺ T, B, lymphomas, activated monocytes, mast cells	T, B, macrophages, mast cells, granulocytes, various immune cells	inhibits production of various cytokines, downregulates Th1 and Th2, growth costimulator for mast cells, peripheral lymphocytes, thymocytes, chemoattractant for T (human)	CDw210	BMS215/2, BMS614/2, BMS629, BMS642/2 BMS215HS BMS215INST, BMS614/2INST, BMS642INST BMS215/2MST, BMS614MST, BMS642/2MST BMS8215FF, BMS8614/2FF BMS810FF, BMS820FF	Conventional ELISA High Sensitivity ELISA Instant ELISA® Matched Antibody Pairs FlowCytomix™ Simplex FlowCytomix™ Multiplex
IL-11	Megakaryocyte CSF	bone marrow stromal cells (fibroblasts), mesenchymal cells	megakaryocytes, pre-adipocytes, hematopoietic progenitors	regulator of megakaryocytopoiesis, stimulates primitive multilineage hematopoietic progenitors, inhibits differentiation of pre-adipocytes, induction of acute phase proteins by hepatocytes	CD130 / gp130 + NR1	-	-
IL-12	NKSF, TSF	monocytes, macrophages, DC, peripheral lymphocytes	T, NK	proliferation of lymphoblasts, activation of NK, promotes CTL reactions, proliferation of mononuclear cells, promotes generation of LAK, induces synthesis of IFN-γ		BMS238, BMS2013, BMS6004, BMS616, BMS646 BMS616MST BMS8238FF, BMS86004FF BMS810FF	Conventional ELISA Matched Antibody Pairs FlowCytomix™ Simplex FlowCytomix™ Multiplex
IL-13	NC30, p600	Th2 (mouse), Th and CD8⁺ T (human)	monocytes, macrophages, B	downregulates macrophage activity, reduces pro-inflammatory cytokine and chemokine production, induces differentiation of human monocytes, differentiation, proliferation, isotype switching in B, induces CD23 on B	IL-13Rα + CD132 ($γ_C$)	BMS231/3, BMS6015 BMS231INST BMS231/3MST, BMS6015MST BMS8231FF, BMS86015FF	Conventional ELISA Instant ELISA® Matched Antibody Pairs FlowCytomix™ Simplex
IL-15	IL-T	fibroblasts, monocytes, epithelial cells	T, NK	maturation of NK and NKT, survival of NK, proliferation of T and mast cells, inhibition of apoptosis	IL-15R	-	-
IL-17A	CTLA-8	CD4⁺ T subset (Th17)	monocytes, neutrophils, T, endothelial cells, stromal cells	pro-inflammatory, increases local production of chemokines, recruitment of monocytes and neutrophils, drives T responses	CD217	BMS2017, BMS6001 BMS6001MST BMS82017FF, BMS86001FF BMS820FF	Conventional ELISA Matched Antibody Pairs FlowCytomix™ Simplex FlowCytomix™ Multiplex
IL-18	IGIF	macrophages, Kupffer cells, monocytes, DC, T, B, keratinocytes, epithelial cells, astrocytes, microglial cells, osteoblastic stromal cells	T, B, NK, endothelial cells	pleiotropic cytokine, acute immune response, pro-infammatory, regulation of functionally distinct subsets of T helper cells, induces IFN-γ and GM-CSF production, involved in apoptosis, mediates angiogenesis, anti-tumoral activity	CD218a / IL-1Rrp + CD218b / IL-18RAP	BMS267/2, BMS618/2, BMS672 BMS267INST BMS267/2MST, BMS672MST BMS8267FF, BMS8618FF	Conventional ELISA Instant ELISA® Matched Antibody Pairs FlowCytomix™ Simplex
IL-20	-	activated macrophages, Th17	synovial fibroblasts, neutrophils, endothelial cells, CD8⁺ T, keratinocytes	pleiotropic cytokine, potent inflammatory, angiogenic and chemoattractive characteristics	IL-20R1 + IL-20R2	-	-
IL-21	-	activated T (Th17)	T, B, NK	modulation of T, B and NK functions and cells of myeloid origin, potent anti-tumor agent	IL-21R + CD132 ($γ_C$)	BMS2043	Conventional ELISA
IL-22	IL-TIF	T, NK	various tissue cells (skin, kidney, digestive- and respiratory tract)	promotion of anti-microbial defense, protection against damage, reorganization of non-immune tissues, induction of acute phase reactants	IL-22R1 + IL-10R2	BMS2047, BMS6016 BMS82047FF, BMS86016FF	Conventional ELISA FlowCytomix™ Simplex
IL-23	-	activated DC, monocyte-derived macrophages	memory T, activated T, macrophages, DC	memory T proliferation, enhances production of IL-12, IFN-γ and TNF-α from activated T, activates macrophages and DC, potent anti-tumoral and anti-metastatic effects in murine models	IL-23R + IL-12R-β1	BMS2023/2, BMS2013 BMS2023/2MST BMS82023FF, BMS86017FF	Conventional ELISA Matched Antibody Pairs FlowCytomix™ Simplex
IL-26	AK-155	Th1, Th17	epithelial cells (carcinoma cells, keratinocytes)	unknown	IL-20R1 + IL-10R2	-	-
M-CSF	CSF, MGF	monocytes, granulocytes, endothelial cells, fibroblasts, activated B and T, uterine epithelial cells	monocytes, macrophages, hematopoietic stem cells	proliferation and differentiation of hematopoietic stem cells into macrophages, growth, survival and differentiation of monocytes, ADCC, induction of various factors in monocytes and macrophages	CD115	-	-
Perforin	Cytolysin	cytotoxic T, NK	virally infected or transformed cells	membrane permeabilization by polymerization in the presence of calcium, formation of transmembrane channels	-	-	-
TGF-β	DIF, MDGF	rapidly released by platelets or inflammatory cells after activation at sites of injury or infection, present in human milk	monocytes, neutrophils, lymphocytes	inflammatory cytokine, regulator of cell growth, migration, adhesion, extracellular matrix formation, apoptosis, potent chemoattractant, tissue repair, restoration of tissue integrity	TβRI TβRII	BMS249/2, BMS254, BMS608/2, BMS623 BMS249INST BMS8249FF	Conventional ELISA Instant ELISA® FlowCytomix™ Simplex
TNF-α	Cachectin, TNFSF2	macrophages, monocytes, neutrophils, T, NK, astrocytes, microglial cells, smooth muscle cells, fibroblasts, various cells, present in human milk	macrophages, neutrophils, fibroblasts, leukocyte and lymphocyte progenitors, Langerhans cells, various cell types	induction of cell death, alterations of endothelium, inhibits anticoagulatory mechanisms and promotes thrombotic processes, potent chemoattractant for neutrophils, induces chemoattractant cytokines, fibroblast growth factor	TNFRSF1A / CD120a TNFRSF1B / CD120b + TRAF proteins	BMS2034, BMS607/2, BMS622, BMS644/3 BMS223/2BL BMS223HS BMS223INST, BMS607/2INST BMS223/4MST, BMS607MST, BMS622MST, BMS644/3MST BMS8223FF, BMS8607/2FF, BMS8622FF BMS810FF, BMS820FF, BMS825FF	Conventional ELISA BioLISA High Sensitivity ELISA Instant ELISA® Matched Antibody Pairs FlowCytomix™ Simplex FlowCytomix™ Multiplex
TNF-β	TNFSF1	T, leukocytes, fibroblasts, astrocytes, myeloma cells, endothelial cells, epithelial cells, some transformed cell lines	fibroblasts	induces cytokine synthesis in fibroblasts, mitogen for B, terminal differentiation and G-CSF synthesis in monocytes, cytolytic or cytostatic for many tumor cells, chemoattractant, growth inhibitor for osteoclasts and kratinocytes, synthesis of stress hormones	TNFRSF1A / CD120a TNFRSF1B / CD120b + TRAF proteins	BMS202 BMS202INST BMS202MST BMS8202FF BMS810FF	Conventional ELISA Instant ELISA® Matched Antibody Pairs FlowCytomix™ Simplex FlowCytomix™ Multiplex

Human · Mouse · Rat · Monkey · Pig