

Name	Other Names	MW	Structure	Distribution	Function
CD1d	CD1.1/1.2, Ly-38	43-49kD	IgSF	leukocytes, intestinal epith	Ag presentation, mucosal immunity, with beta2m, ligand for NKT cells
CD2	LFA-2, Ly-37, SRBC-R	45-58kD	IgSF	thymocytes, T, NK, B, pre-B, myeloid, erythrocytes	adhesion, T activation, CD48 receptor
CD3d	T3d	20kD	IgSF	T, thymocyte subset, NKT	TCR subunit, TCR expression & signaling
CD3e	T3e	20kD	IgSF	T, thymocyte subset, NKT	TCR subunit, TCR expression & signaling
CD3g	T3g	25kD	IgSF	T, thymocyte subset, NKT	TCR subunit, TCR expression & signaling
CD4	Ly-4, L3T4	55kD	IgSF	thymocyte subset, T subset, DC	TCR coreceptor, thymic differentiation, T activation, MHC class II receptor
CD5	Ly-1	67kD	SRCRSF	thymocytes, T, B subset (B1)	T activation, T-B interaction, CD72 receptor
CD6	T12	100-130kD	SRCRSF	thymocytes, T, neurons, not on B	T differentiation & costimulation, CD166 receptor

CD7		40kD	IgSF	human early T marker, CD7KO has normal phenotype	
CD8a	Ly-2	32-34kD	IgSF	thymocyte subset, T subset, DC subset, not fresh NK	TCR coreceptor, MHC class I receptor, T differentiation, homodimer or heterodimer with CD8b
CD8b	Ly-3	30kD	IgSF	thymocyte subset, T subset, not fresh NK	TCR coreceptor, MHC class I receptor, T differentiation, heterodimer with CD8a
CD9	p24	24-27kD	TM4SF	myeloid, platelets, Tact, B subset	cell adhesion, migration, T costimulation
CD10	CALLA, NEP, Mme	100kD	type II TM	B precursors, fibroblasts, BM stromal cells	zinc-binding metalloproteinase neutral endopeptidase ectoenzyme, B development
CD11a	integrin alphaL, Ly-15, Itgal	80kD	IntgF	T, B, NK, gran, mono, mac, DC, thymocytes	CD11a / CD18 (LFA-1) receptor for ICAM-1 and ICAM-2, intercellular adhesion, T costimulation

CD11b	Mac-1, integrin alphaM, Itgam, CR3	170kD	IntgF	myeloid, NK, Tact, B subset	CD11b / CD18 receptor for CD54 and CD102, adhesion to ECM, fibrinogen, & complement iC3b
CD11c	p150, integrin alphaX, Itgax, CR4	150kD	IntgF	DC, myeloid, NK, T subset	CD11c / CD18 receptor for fibrinogen & iC3b, adhesion
CD13	Aminopeptidase N, Lap1	150kD	Type II TM	myeloid, endoth, DC	zinc-binding metalloproteinase antigen processing
CD14	LPS-R, Mo2	53-55kD	GPI-linked	mac, granlow	receptor for LPS/LBP, LPS recognition
CD15	Lewis-X		CHO	transient in brain	fucosyl transferase (Fut4)
CD16	FcgammaRII Ly-17, Fcgr3	50-60kD	IgSF	NK, neutrophils, mast cells, mac	Fcgamma low affinity receptor, phagocytosis, ADCC, NK activation
CD18	Integrin beta2, Itgb2	90-95kD	IntgF	leukocytes	with CD11a, b and c, adhesion
CD19	B4	95kD	IgSF	B, FDC, good B lineage marker, not plasma cells	with CD21 & CD81, BCR coreceptor, B activation / differentiation
CD20	Ly-44, B1, Ms4a2	33-37kD	TM4SF	B, T subset	B differentiation / activation

CD21	CR2, CR1	150kD	CCR5F	B, DC	CD21 / CD35 other variants of CR2 gene, complement C3d receptor, with CD19 & CD81, BCR coreceptor
CD22	Lyb-8, Siglec-2	140- 160kD	IgSF / sialoadhes	B	adhesion, B- mono & B-T interactions, B activation, BM homing receptor for IgD+ B cells, CD75 counter- receptor
CD23	FcepsilonRII, Ly-42, Fcer1a	45- 49kD	C-type lectin	B, mono, mac, gran, platelets, FDC, not B1 cells	CD19/CD21/CD8 receptor, low affinity IgER, signaling
CD24a	HSA, Ly-52, Nectadrin	35- 52kD	GPI- linked	B, gran, mono, mac, Tact, erythrocytes, neurons	several isoforms, B differentiation & proliferation, adhesion, T costimulation, CD62P receptor
CD25	Ly-43, p55, IL2Ralpha	55kD	Type I TM	pre-B, pre-T, Tact, Bact, DC subset, mono, mac	low affinity IL-2 binding, with IL- 2Rbeta & gamma forms IL-2 receptor high affinity, also soluble form

CD26	DPP4, THAM	110kD	Type II TM	thymocyte subset, Tact, B, NK, epith	dipeptidyl peptidase ectoenzyme, activation, adhesion
CD27	T14, Tnfrsf7	45kD	TNFRSF	medullary thymocytes, T, NK, B subset	CD70 receptor, T costimulation
CD28	Tp44	45kD	IgSF	T, thymocytes, NK	CD80 (B7-1) & B7-2 (CD86) receptor, T costimulation
CD29	Integrin beta1, gpIIa, Itgb1	130kD	IntgF	leukocytes, fibroblasts, endoth, epith	with CD49a-f (VLA-1-6), with CD51 (alphavbeta1), CD29/CD49a ( VLA-1) receptor for VCAM-1, MAdCAM-1 & ECM, VLAB, adhesion, embryonic development
CD30	Ki-1, Tnfrsf8	105- 120kD	TNFRSF	Bact, Tact platelets, gran, endoth, DC, mono subset, T subset, B subset, LAK	CD153 receptor, lymphocyte proliferation, apoptosis, peripheral tolerance
CD31	PECAM-1, gpIIa	130- 140kD	IgSF	multiple isoforms, CD38 receptor, signaling, platelet-endoth adhesion	

CD32	FcγRII Ly-17, FcγR2b	40- 60kD	IgSF	mono, mac, gran, B, Tact, not NK	low affinity Fc receptor for aggregated Ig/immune complexes, ADCC
CD33	Siglec-3, gp67	67kD	IgSF, sialoadhesin	myeloid progenitors; gran	possible role in hematopoiesis, binds sialic-acid
CD34	Mucosialin	90- 120kD	Sialomucin family	hematopoietic precursors, capillary endoth, BM stroma, mast cells	CD62L receptor, adhesion
CD35	Cr1, Cr2	190kD	SRCRSF	B, granact, FDC	CD21 & CD35 alternative splice variants of Cr2 gene, binds C3b & C4b, adhesion, phagocytosis
CD36	FAT, fatty acid translocase	88kD		platelets, adipocytes, mono, mac, endoth, erythrocyte mRNA:	oxidized LDL receptor
CD37			TM4SF	lymphoid, myeloid	T-B interaction
CD38	Cd38-rs1, T10	42kD	Type II TM	B, marginal zone B (high), Tact, thymocyte subset, subsets in yolk sac, in fetal liver, in BM	B activation, CD31 receptor, ectoenzyme, ADP-ribosyl cyclase/hydrolase
CD39	Entpd1	70- 100kD		lymphocyteact microglia, endoth	ecto-nucleoside trisphosphate diphosphohydrolyase

CD40	gp39 receptor, Tnfrsf5	45-50kD	TNFRSF	B, mono, mac, T subset, DC, endoth, thymic epith, induced on cardiac myocytes	CD154 receptor, T-B interaction, B costimulation and survival, isotype-switching
CD41	gpIib, Itga2b, CD41b	110-125kD	IntgF	platelets, megakaryocyt	with CD61 forms GPIIb/IIIa, binds fibrinogen, fibronectin, vWF & thrombospondin platelet activation, aggregation
CD42	Gp9, GPIX	20kD	LRRF	platelets, megakaryocyt	platelet activation, aggregation
CD43	Leukosialin, Ly-48, Spn, sialophorin	115 & 135kD	Type I TM	T, Tact, early B, B subset, plateletslow, not resting B, not DC	isoforms, signaling, CD54R, B survival, adhesion
CD44	Pgp-1, Ly-24, HERMES	80-95 & 130kD		broad, memory T, not platelets, or hepatocytes	binds hyaluronic acid, leukocyte adhesion/homing T activation, tumor metastasis
CD44R	variants of CD44			restricted & varied	adhesion, metastasis, receptor for Hyaluronate

CD45	LCA, Ly-5, Ptprc	180-240kD	PTPR family, ASV	leukocytes, not mature erythrocytes	tyrosine phosphatase, leukocyte differentiation / activation, pan-leukocyte marker
CD45.1				Ly-5.2 strains: SJL, DA, STS/A, RIII	
CD45.2				Ly-5.1 strains: BALB/c, C3H, C57BL/6, DBA/1, DBA/2, AKR, A, 129	
CD45R/			CT1 CHO	cytotoxic Tact	
CD45R	B220	220kD		B, NK progenitors, LAK, Tact	
CD45R/			exon A isoform		
CD45RE		200-240kD	exon B isoform	T subset, B, mono, mac	
CD45RC		200-240kD	exon C isoform	T subset, B	
CD45RC		180kD	isoform not exons A, B, or C	Tact, Bact, DC subset	
CD46	MCP, membrane cofactor protein		CRRSF	broad	complement regulation, role in fertilization



CD47	IAP, Itgp	50kD	IgSF	hematopoietic cells, epith, endoth, fibroblasts, platelets	with beta3 integrins, leukocyte adhesion, migration, activation, extravasation of PMN, binds SIRPalpha
CD48	Blast-1, BCM-1, Sgp-60	45kD	IgSF, GPI-linked	broad on lymphocytes, not fibroblasts	adhesion, T costimulation, CD2 and Ly-9 receptor
CD49a	VLA-1, Integrin alpha1, Itga1	180kD	IntgF	Tact, endoth platelets, T subset, megakaryocyte NK subset	adhesion, CD49a / CD29 binds collagen & laminin
CD49b	VLA-2, Integrin alpha2, Itga2	165kD	IntgF		adhesion, CD49b / CD29 binds collagen & laminin
CD49c	VLA-3, Integrin alpha3, Itga3	125kD	IntgF	B subset, Tlow	CD49c/CD29 binds laminin, fibronectin, collagen
CD49d	VLA-4, Integrin alpha4, Itga4	150kD	IntgF	T, B, mono	CD49d / CD29 binds fibronectin, VCAM-1, with beta7 forms LPAM-1 & binds to MAdCAM-1, homing receptor
CD49e	VLA-5, Integrin alpha5, Itga5	135kD	IntgF	thymocytes, Tact	adhesion, CD49e / CD29 binds fibronectin
CD49f	VLA-6, Integrin alpha6, Itga6	120kD	IntgF	memory T, thymocytes, platelets	adhesion, CD49f / CD29 binds laminin

CD50	Icam5, Tcn, Telencephali	130kD	IgSF	memory T, thymocytes, platelets	adhesion, CD49f / CD29 binds laminin
CD51	VitronectinR, Integrin alphav, Itgav	125, 24kD	IntgF	platelets, megakaryocyt endoth, osteoblasts, melanoma	adhesion, CD51 / CD61 binds vitronectin, von Willebrand factor, fibrinogen & thrombospondin
CD52	CAMPATH-1, MB7, CLS1	12kD	GPI-linked	mature lymphocytes	
CD53	OX-44	35-42kD	TM4SF	leukocytes, DC, osteoblasts, osteoclasts	signaling
CD54	ICAM-1, Ly-47	85-110kD	IgSF	endoth, mono, resting lymph (high on activation)	CD11a / CD18 (LFA-1), CD11b / CD18 (Mac-1) & CD43 receptor, adhesion, T costimulation
CD55	Decay Accelerating Factor	60-70kD	CCRSF	broad, induced in uterus by estrogen	similar to Crry, protection from autologous complement attack
CD56	NCAM	20-185kD	IgSF	neural tissue, multiple isoforms	adhesion, neuron development, skeletal myogenesis
CD57			B3GAT1	Glucuronosyl-transferase P	
CD58 (H)	LFA-3			not defined in mouse	

CD59	Protectin, MAC- inhibitor	19kD	GPI- linked	broad	binds complement C8 & C9, blocks membrane attack complex assembly
CD60 (H)			CHO	not defined in mouse	
CD61	GPIIIa, Integrin beta3, Itgb3	105kD	IntgF	platelets, megakaryocyt mac, endoth	CD41 / CD61 or CD51 / CD61 complexes adhere to ECM
CD62E	E-selectin, ELAM-1, Sele 97	107- 115kD	Selectin	endoth	sialyl-Lewis x receptor, leukocyte rolling & migration, tumor metastasis
CD62L	L-selectin, LECAM-1, sell	74 & 95kD	Selectin	B, T, mono, gran, NK, thymocytes	CD34, GlyCAM, & MAdCAM-1 receptor, lymphocyte homing, leukocyte tethering & rolling
CD62P	P-selectin, Selp	140kD	Selectin	plateletsact, endoth	CD162 & sialyl LewisX receptor, adhesion, neutrophil rolling, platelet- neutrophil & platelet-mono interactions, binds to CD24

CD63	MLA1	53kD	TM4SF	plateletsact, mono, mac	activated platelets marker, lysosomal membrane protein, translocates to surface upon activation, melanoma associated antigen
CD64	FcgammaRI	72kD	IgSF	mono, mac, DC, granact	high affinity IgG receptor, phagocytosis, trypsin- sensitive, ADCC
CD65 (H)				not defined in mouse	
CD66a	Ceacam1, C-Cam		IgSF, CEA family	colon, liver, hematopoietic tissues	cell-cell interaction, hepatitis virus receptor
CD68	Macrosialin, gp110	87- 115kD	Sialomucir	predominantly intracellular, tissue mac, DClow	lysosomal associated protein
CD69	Activation Inducer Molecule, VEA	35- 39kD	C-type lectin	Tact, Bact, NKact, granact, thymocytes, platelets	activation, early activation marker
CD70	Ki-24, Tnfsf7	50, 70, 90, 160kD	TNFSF	Bact, Tact, cardiac myocytes	CD27 receptor, T & B costimulation
CD71	T9, Trfr	95kD	Type II TM, dimer	proliferating cells, reticulocytes, erythroid precursors	transferrin receptor, iron uptake, cell activation

CD72	Lyb-2	40-45kD	C-type lectin, homodimer	B, FDC, T subset, polymorphic extracellular portion	CD5 & CD100 receptor, B costimulation
CD73	Nt5e	69kD	GPI-linked		ecto-5'-nucleotidase, T costimulation, adhesion
CD74	Ii, Ia-invariant chain	33-43kD	Type II TM	B, mac, mono	MHC class II traffic & function, antigen presentation
CD75				BM homing of recirculating B cells, CD22 counter-receptor	
CD77 (H)				not defined in mouse	
CD79a	Iga, mb-1, Ly-54	33 & 45kD	IgSF	B	BCR subunit, BCR expression & signaling
CD79b	Igb, B29	37kD	IgSF	B	BCR subunit, BCR expression & signaling
CD80	B7, B7-1, Ly-53	60kD	IgSF	Bact, Tact, mono, mac, DC, pancreatic beta cells	CD28 & CD152 receptor, costimulation, T-B interaction
CD81	TAPA-1	26kD	TM4SF	T, B, NK, thymocytes, DC, endoth, fibroblast, neuroblastoma, melanomas	with CD19 & CD21, signaling, T costimulation
CD82	KAI1, C33	50-53kD	TM4SF, ASV	Tact, mRNA: spleen, kidney	inhibits tumor cell mobility

CD83		43kD	IgSF, Siglec family	DC, Tact, mRNA: spleen & brain	regulation of T response, binds to a ligand on B cells
CD84			IgSF	B, mac, mRNA: hematopoietic tissue	
CD85				MHC class I recognition	
CD86	B70, B7-2, Ly-58	80kD	IgSF	mono, Bact, Tact, DC	CD28/CD152 receptor, T costimulation, T-B interaction
CD87	UPA-R, Plaur		GPI- linked		mRNA: muPAR1 luminal epith of gastric mucosa, muPAR2 basal epith, PAR2 secreted uPA binding protein
CD88	C5aR, C5r1	40kD	TM7SF	gran, neurons, astrocytes, microglia	C5a receptor, granulocyte activation, neurodegenerati
CD89	FcalphaR, IgA receptor	55- 75kD	IgSF	mono, mac, neutrophils, B subset, T subset	phagocytosis, degranulation, respiratory burst
CD90	Thy-1	18kD	IgSF, GPI- linked	thymocytes, T, hematopoietic subset, neurons, not B	hematopoietic stem cell & neuron differentiation, T activation
CD90.1				thy1a(thy1.1) strains: AKR & RF	
CD90.2				thy1b(thy1.2) all other strains	

CD91	Irp1, A2mr	600kD	LDL receptor family	mono, mac, neurons, liver, fibroblasts	receptor for a-2-macroglobulin, LDL, HSPgp96, apolipoprotein, lipoprotein metabolism
CD92 (H)				not defined in mouse	
CD93	AA4.1 antigen, C1qRp, early B lineage marker, Ly68	130-140kD	C-type lectin	hematopoietic progenitor marker for early B cells, endo, megakaryoblasts, platelets	phagocytic complement C1q receptor
CD94	KP43, klrd1	43kD	C-type lectin	NK, T subset	with NKG2, inhibits NK function
CD95	Apo-1, Fas	35kD	TNFRSF	thymocytes, lymphocytes	CD95L(CD178) receptor, apoptosis induction, immune system regulation, lpr mutation
CD96	TACTILE, T cell ACTivation Increased Late Expression	160kD	IgSF	mRNA: spleen, mammary gland	adhesion of activated T & NK
CD97	TM7LN1 TM7S			lymphoid, myeloid	CD55 receptor
CD98	4F2, Ly-10	80, 40kD		thymocytes, lymphocytes, mono, BM	cell activation, calcium flux
CD99	Pilr-1, D4				
CD100	Sema4d, semaphorinH	150kD	IgSF	mRNA: lymphoid & nervous tissues	CD72 receptor, role in immune & nervous systems

CD101	IgSF3		IgSF		role in susceptibility to type I diabetes
CD102	ICAM-2, Ly-60	55-65kD	IgSF	lymphocytes, mono, platelets, endoth	binds CD11a / CD18 (LFA-1), costimulation
CD103	HML-1, alphaIEL, alphaE integrin, Itgae	150kD	IntgF	intraepithelial lymphocytes, BM mast, lymphocytesa	with integrin beta7, binds E-cadherin, lymphocyte homing
CD104	beta4 integrin, Itgb4	220kD	IntgF	epith, endoth, immature thymocytes, Schwann cells, tumor cells, keratinocytes	with CD49f, cell adhesion / migration, differentiation, tumor metastasis, a6b4 is tumor associated Ag Tsp-180
CD105	Endoglin, Eng	95kD		endoth, BM cell subset, macact	response to TGF-beta1, ligand for TGF-beta, adhesion
CD106	VCAM-1	110kD	IgSF	endothact, FDC, BM myeloid	CD49d / CD29 receptor, adhesion / migration, costimulation
CD107a	LAMP-1	120kD		plateletsact, Tact, endothact	adhesion, metastasis
CD107b	LAMP-2	110kD		plateletsact, Tact, endothact	adhesion, metastasis
CD108	Sema7a	80kD	IgSF, GPI-linked	mRNA: nervous system(high), immune system	
CD109	Gov platelet alloantigen				



CD110	TPO-R, c-mpl	82-84kD	CRSF	megakaryocyte platelets	thrombopoietin receptor, megakaryocyte differentiation
CD111	PRR1, Nectin-1, Pvrl	64-72kD	IgSF, ASV	fibroblasts, epithelium, neurons	polio virus receptor-related protein1, mediates entry of herpes simplex virus (HSV) strains
CD112	PRR2, Pvs, Nectin-2	64-72kD	IgSF, ASV	mRNA: brain, spinal cord, spleen, kidney, heart, liver	intercellular adhesion, not a receptor for poliovirus
CD113	PVRL3, Nectin3	100kD	Ig-like, ASV	broad, epith	adhesion molecule, interacts with afadin
CD114	G-CSFR, Csfgr, Csf3r	95, 139kD	CRSF	progenitor & mature neutrophils, endoth, placenta, some myeloid leukemia	myeloid proliferation & differentiation
CD115	M-CSFR, c-fms, Csf1r	150kD	RTKF	monocytic progenitors, osteoclasts	M-CSF receptor, monocytic lineage proliferation/differentiation, role in differentiation of osteoclasts

CD116	GM-Csf2ra	70-85kD	CRSF	mono, gran, DC, endoth	low affinity GM-CSF receptor, with common beta AIC2B form high affinity receptor, myeloid proliferation, differentiation
CD117	c-kit, Steel factor	145kD	IgSF, RTKF	hematopoietic stem & progenitors, neural crest-derived melanocytes, primordial germ cells, mast cells	Stem Cell Factor receptor, hematopoietic progenitor development & differentiation, dominant white spotting (w) mutation
CD118	LIFR	190kD	Type I cytokine receptor family, ASV	placenta, liver, kidney, heart, lung, brain epith	membrane-bound involved in signal transduction, soluble form inhibits activity of LIF
CD119	IFNgammaR, ifgr1, Ifngr	90-100kD		mac, mono, B, T, NK, neutrophils, endoth	Interferon-gamma receptor alpha chain, with IFNgamma AF-1, host defense, high affinity IFNgamma binding
CD120a	TNFR1, p55	50-60kD	TNFRSF	broad	TNF receptor, binds both TNFalpha & TNFbeta, apoptosis

CD120b	TNFR2, p75	75-85kD	TNFRSF	broad	TNF receptor, high affinity binding to TNFalpha & TNFbeta, apoptosis
CD121a	IL-1R type I	80kD	IgSF	broadlow, fibroblasts, T, brain, pancreas, cardiac endoth, epith, developing oocytes	Type I IL-1R, binds IL-1alpha & IL-1beta, IL-1 signaling
CD121b	IL-1R, type II	68kD	IgSF	B, mac, mono, T subset (Th2), epidermis, dermis, vaginal basal epith, brain	Type II IL-1R, binds IL-1alpha & IL-1beta, a decoy receptor
CD122	IL-2Rbeta, p70	75kD	CRSF	NK, T, B, mono	IL-2R & IL-15Rbeta chain, signaling, with CD25 & CD132 form high affinity IL-2R, lymphocyte development
CD123	IL-3Ralpha	70kD	CRSF	lymphocyte subset, basophils, hematopoietic progenitors, mac, DC, megakaryocyt	IL-3R alpha chain, low affinity binding to IL-3, with CDw131 form high affinity IL3 binding

CD124	IL-4Ralpha	140kD	CRSF	lymphocyteslo mono, hematopoietic precursors, fibroblast, epith	IL-4Ralpha chain, with CD132 or IL- 13Ralpha chain, with CD132 forms high affinity IL- 4R, T growth & differentiation, soluble form
CD125	IL-5Ralpha	60kD	CRSF	eosinophils, basophils	IL-15Ralpha chain, with CDw131 for low affinity IL-5 binding, with beta subunit for high affinity IL- 15 binding
CD126	IL-6Ralpha	80kD	IgSF, CRSF	Bact, plasma cells, most leukocyteslow fibroblasts	IL-6Ralpha subunit, low affinity IL-6 binding, with CD130 for high affinity IL-6 binding, soluble form
CD127	IL-7Ralpha	65- 75kD	CRSF	pro-B, T	IL-7Ralpha chain, with CD132 for high affinity IL-7 binding, T & B development
CD128	see CD181 and CD182				
CD130	IL-6Rbeta, gp130	130kD	CRSF	broad in adult & embryonic cells	Common beta chain of IL-6R, IL-11R, LIFR, OSMR

CD131	IL-3R, AIC2B/A, common beta, Csf2rb1, Csf2rb2	95- 120kD	CRSF	mono, gran, early B	2 genes in mouse, signaling, with alpha subunits of IL-3, IL-5, GM-CSF receptors
CD132	IL-2R Common beta	64kD	CRSF	T, B, NK, mono, gran, DC	Subunit of IL-2, IL-4, IL-7, IL- 13, & IL-15R, signaling, mutation: X- linked SCID
CD133	Prominin-1, AC133	115- 120kD	TM5 glycoprote	primitive cells like hematopoietic progenitors, neural, endoth stem cells, retina, retinoblastoma developing epith (apical surface)	unknown
CD134	OX-40, Ly- 70, Txgp1	48- 50kD	TNFRSF	Tact	OX-40L receptor, apoptosis, T activation / differentiation
CD135	Flt3/Flk2, EMS-like tyr kinase 3	130- 150kD	RTK family	hematopoietic progenitors: myeloid & primitive B progenitors	binds FLT3 ligand, myeloid & lymphoid development, expands hematopoietic progenitors & DC
CD136	STK, Mst1r, RON	180kD	RTK family	hematopoietic cells	macrophage stimulatory 1 receptor

CD137	4-1BB, Tnfrsf9	30kD	TNFRSF	Tact	T costimulation, binds to 4- 1BBL, fibronectin, vitronectin, laminin, collagen VI
CD138	syndecan-1, Sdc1	80- 150kD	Syndecan	epith, plasma cells, pre-B, neurons	receptor for ECM, cell morphology, B differentiation
CD139 (H)				not defined in mouse	
CD140a	PDGF receptor alpha	180kD	RTK family	fibroblasts, smooth muscle, glial cells, chondrocytes	PDGFRaa binds PDGF AA, AB, BB, PDGFRab binds AB, BB, PDGFRbb binds PDGFBB, embryonic development, signaling
CD140b	PDGF receptor beta	180kD	RTK family	fibroblasts, smooth muscle, glial cells, chondrocytes	see CD140a for ligands, signaling
CD141	Thrombomoc	100kD	C-type lectin	mono, neutrophils, endoth, smooth muscle	initiation of protein C anticoagulant pathway
CD142	Tissue Factor, factorIII, F3	45kD	mRNA: broad	binds clotting factor VIIa, embryonic development	
CD143	ACE	170kD	endoth, epith, neuron, fibroblasts macact	peptidyl- peptidase, angiotensin converting enzyme	

CD144	Cadherin5, VECadherin	130kD	Cadherins	endoth	adhesion, intercellular interaction
CD146	MUC18, S- endo, mcom		IgSF	embryonic tissue, mammary tumors	cell adhesion during development
CD147	Neurothelin, basigin, Bsg		IgSF	leukocytesact, erythrocytes, platelets, endoth	adhesion, blood-brain barrier
CD148	HPTP-eta, M4, M56	240- 260kD		mRNA: broad, high in brain, kidney	tyrosine phosphatase R Type III
CD150	SLAM, IPO- 3	75kD	IgSF	T, B, maintained on Th1	costimulation, proliferation, Ig production
CD151	PETA-3, SFA-1	32kD	TM4SF	endoth, megakaryocyt platelets	adhesion, signaling
CD152	CTLA-4, Ly- 56	33kD	IgSF	Tact	CD80, CD86 receptor, negative T stimulation
CD153	CD30L, Tnfsf8	40kD	TNFSF	Tact, macact, neutrophil, B, induced on cardiac myocyte	CD30 receptor, T costimulation
CD154	CD40L, gp39, Ly-62, Tnfsf5	32- 39kD	TNFSF	transiently on Tact, B subset (intracellular), platelets	CD40 receptor, B & DC costimulation, T activation
CD155	PVR	80- 90kD	IgSF	mono, mac	Polio virus receptor
CD156a	ADAM8, MS2	69kD	Type I TM	neutrophils, mono	metalloprotease, leukocyte extravasation
CD156b	TACE/ ADAM 17	100kD		broad	zinc metalloprotease, TNF converting enzyme

CD156c	ADAM10, kuz, kuzbanian, Madm	60kD	Peptidase M12B family	neural precursors, fibroblasts	proteolytic cleavage of cell-surface molecules including Notch, TNF-alpha, APP & ephrin-A2
CD157	BST-1, Ly-65, Bp3	38-48kD	GPI-linked	gran, mono, early B, T subset, BM stroma	ADP-ribosyl-cyclic ADP-ribose hydrolase, pre-B growth
CD158 (H)	KIR			not defined in mouse	
CD159a	NKG2A, Klrc1	43kD		NK & NKT cells	with CD94, Qa-1(b) receptor, inhibitory signaling
CD159c	NKG2C		C-type lectin	NK & NKT cells	with CD94, Qa-1(b) receptor, stimulatory signaling
CD160	BY55	27kD	IgSF	NK subset, T subset	costimulation
CD161c	NKR-P1c, Ly-55, NK1.1	40kD	C-type lectin	NK, T subset	NK cell-mediated cytotoxicity
CD162	PSGL-1, Slp1	120kD	Mucin family	myeloid cells, lymphocyte subset	CD62P & CD62L receptor, adhesion, leukocyte rolling
CD162F (H)	PEN-5			not defined in mouse	
CD163		100-130kD	SRCRSF	peritoneal mac	
CD164	MGC-24, A115, A24	80kD	Sialomucin	mRNA: broad various adult & embryonic tissues	hematopoietic progenitor-stroma interaction
CD165	AD2, gp37			not defined in mouse	



CD166	ALCAM	120kD	IgSF	neurons, Tact, mono, epith, fibroblasts	CD6 receptor, adhesion, T development, T-B interaction, role in nervous system
CD167a	DDR1	120kD	RTK family	epith, myoblasts, brain, early marker neuroectoderr	discoidin domain receptor, tyrosine kinase, adhesion
CD168	RHAMM, Hmnr	70- 73kD		broad	hyaluronan- mediated motility receptor, adhesion, cell locomotion, tumor metastasis (intracellular in human breast cancer)
CD169	sialoadhesin, Sn, Siglec-1	185kD	IgS	tissue mac subset	adhesion, cell- cell & cell- matrix interactions, binds alpha2,3- sialylated ligands CD43, CD227, SRBC- R
CD170 (H)	Siglec-5, CD33-like2	140kD	IgSF, sialoadhes	mac subset, neutrophils	adhesion
CD171	L1, cell adhesion molecule	200- 210kD	IgSF	CNS, PNS, glial cells, mono, T subset, B, DC, lymph node reticular fibroblasts, some epith	homotypic adhesion, T co- stimulation, integrin binding, KO has neuropathologie similar to CRASH disorder

CD172a	SIRPalpha, Ptpns1	110kD	IgSF	mono, mac, DC, T subset, stem cells	adhesion, with CD47, SHP substrate-1
CD172b	SIRPbeta	60- 90kD	Ig-like Type I cell surface receptor	mac and other hematopoietic lineages	engagement of SIRPbeta promotes phagocytosis in mac
CD172g (H)	SIRPgamma			not defined in mouse	
CD173- (H)			CHO		
CD176	Trf, transferring, Tfn, HP		CHO		
CD177	NB1	56- 62kD	GPI- linked	neutrophil subset (surface & intracellular)	
CD178	Fas Ligand, CD95L, TNFSF6	38- 42kD	TNFSF	Tact, testis	apoptosis of CD95+ cells, immune privilege, soluble form in serum, gld mutation nonfunctional FasL
CD179a	V pre B	16kD	IgSF	pro- & early pre-B	B differentiation, signaling, pre- BCR with IgM/CD79alpha/
CD179b	Lambda 5	22kD	IgSF	pro- & early pre-B	B differentiation, signaling, pre- BCR with IgM/CD79alpha/
CD180	RP105, Ly- 78	95- 105kD	LRRF, TLRSF	B, mono, DC	B recognition & signaling of LPS, with MD-1

CD181	CXCR1, IL8Ralpha	39kD	GPCR family	neutrophils, basophils, NK, T subset, mono	binding of IL-8 induces chemotaxis of neutrophils
CD182	CXCR2, IL8Rbeta	40kD	GPCR family	neutrophils, basophils, NK, T subset, mono	binding of IL-8 induces chemotaxis of neutrophils, also binds GRO and NAP-2
CD183	CXCR3, Cmkar3, gpr9	40kD	TM7SF	Tact (Th1), NK, eosinophils, GM-CSF activated hematopoietic progenitors	6Ckine, IP-10 , Mig & I-TAC receptor, T recruitment to inflammatory sites, Th1 response, allograft destruction
CD184	CXCR4, Cmkar4, Fusin/LESTR	45kD	TM7SF	T subset, B, DC, mono, endoth	SDF-1 receptor, embryogenesis, (human: X4 HIV-1 coreceptor)
CD185	CXCR5, BLR1	45kD	GPCR family	spleen, resting B, T, skin-derived DC	binds BLC, involved in B- cell migration into B-cell follicles of spleen and Peyer's patches
CD186	CXCR6, BONZO	40kD	GPCR family	memory T	chemokine receptor for CXCL16, also a coreceptor by SIVs and by strains of HIV-2 and m-tropic HIV-1

CD191	CCR1, MIP-1alphaR, RANTES-R	39kD	GPCR family	neutrophils, mono, lymph, eosinophils & osteoclasts	receptor for C-C type chemokines MIP-1alpha, RANTES, MIP-1beta, MCP-1
CD192	CCR2, MIP-1alphaR	40kD	GPCR family	T subset, mono, B	receptor for the MCP-1, MCP-3 & MCP-4 chemokines
CD193	CCR3, MIP-1alphaRL2	45kD	GPCR family	skeletal muscle & low amounts in leukocytes, T subset	receptor for C-C type chemokines eotaxin, MCP-3, MCP-4 and RANTES
CD195	CCR5, Cmkbr5	45kD	TM7SF	T subset, NK, monolow	MIP-1alpha, MIP-1beta & RANTES receptor, (human: R5 HIV-1 coreceptor)
CD196	CCR6, KY411	45kD	GPCR family	mainly B, T and DC subset	receptor for C-C type chemokines MIP-3alpha/LARC
CD197	CCR7, Cmkbr7	45kD	TM7SF	T, DC subset	6Ckine & MIP-2beta receptor
CD198	CCR8, TER1	50kD	GPCR family	mono, mac, neutrophils, T subset	receptor for TCA-3/I-309
CD199	CCR9, CMKBR10	43kD	GPCR family	high in thymus, immature and mature T	receptor for chemokine SCYA25/TECK, role in T development
CD200	OX-2	45-50kD	IgSF	thymocytes, B, Tact, DC, endoth, neurons	T costimulation, regulation of oxidoreductase pathway

CD201	Procr, EPCR	50kD		endoth & stem cell subset	activated protein C receptor
CD202b	Tie2, Tek	140kD	RTK family	stem cells, endoth from early development	angiogenesis, Angiopoietin-1 receptor
CD203c	ENpp1, PC- 1, TWY	115kD	Type II TM	antibody secreting B, basophils, mast cells, megakaryocyt glioma	plasma cell alloantigen, ectoenzyme, binding/clearanc of extracellular nucleotides
CD204	Macrophage scavenger- R, Scvr	220kD		mac	endocytosis of macromolecules
CD205	DEC-205, Ly75	205kD	mac mannose receptor SF	DC, thymic epith, Blow, BM stromal, pulmonary epith, brain capillaries	antigen up- take/presentation immune inhibition
CD206	macrophage mannose-R, Mrc1	180kD		mac, mono, DC subset	phagocytosis / pinocytosis mannose containing molecules
CD207	Langerin	40kD	Type II TM	Langerhans cells	Ag capture & endocytic receptor, with Birbeck granules
CD208 (H)	DC-LAMP, Lamp3	70- 90kD		DCact, interdigitating DC	
CD209	DC-SIGN, CIRE	44kD		DC subset	ICAM-3 receptor, HIV-1 binding protein, T-DC interaction

CD210	IL-10R	90-110kD		Th1, B, NK, mono, mast cells, mac	IL-10 receptor, signaling, related to IFN receptors
CD212	IL-12Rbeta1	100kD	dimer & oligomer Type I TM	Tact, NKact	high affinity binding to IL-12, with IL-12 receptor beta2, signaling, T & NK response to IL-12
CD213a	IL-13Ralpha1, NR4	65kD	CRSF	mono, NK, fibroblasts, endoth	binds IL-13 low affinity, with CD124
CD213a	IL-13Ralpha2	65kD	CRSF	B, mono	binds IL-13 high affinity
CD217	IL-17R	120kD		broad	IL-17 receptor
CD218a	IL-18Ralpha, IL1Rrp	70kD	IL-1R family	T, NK & DCs	IL-18 binding leads to the activation of NF-kappaB
CD218b	IL-18Rbeta, IL18Rap	70kD	IL-1R family	T, NK and DCs	forms heterodimeric receptor with IL-18Ralpha to enhance IL-18 binding
CD220	InsulinR, Insr	140 & 70kD	RTK family	broad	Insulin receptor, regulation of metabolism
CD221	IGF-1R	140 & 70kD	RTK family	broad	binds IGF high affinity, prolif/differentiation
CD222	IGF-II R, M6P/IGF2R	220-250kD	Type I TM	broad, 90-95% intracellular	cation-independent mannose 6-phosphate receptor, TGFbeta-LAP, plasminogen & proliferin receptor

CD223	LAG-3	70kD	IgSF	Tact, Nkact	MHC class II ligand, role in natural killing
CD224	GGT, Ggtp	27, 68kD		yolk sac, protoplasmic astrocytes, endoth, embryonic stem cell lines	gamma-glutamyl transpeptidase
CD225	Ifitm1, fragilis2, Mil2			primordial germ cells	adhesion, differentiation, interferon-induced transmembrane protein 1
CD226	DNAM-1, PTA-1, TLISA1		IgSF	Th1, CD8 T, platelets	platelet activation, T differentiation, costimulation, Th1 function
CD227	Muc1, EMA	300kD	Mucin family type I TM	lymphocytes, tumors, epith, increased in pregnancy	epithelial membrane antigen, organogenesis
CD228	Melanotransf Mfi2	80-95kD	Transferrin	mRNA: cartilage (high), testis (moderate)	
CD229	Ly-9, Lgp100	95, 110kD	IgSF	thymocytes, T, B, BM subset, not erythrocytes	adhesion
CD230	Prion protein, PrnP	35kD	neurons, lymphocytes other cells	Scrapie-associated fibril protein	
CD231	TALLA-1, A15	30-45kD	TM4SF	mRNA: brain, colon, muscle, heart, kidney, spleen	T cell acute lymphoblastic leukemia marker, neuronal function

CD232	VESP-R, PlexinC1	200kD			broad	viral-encoded semaphorin protein receptor
CD233	Band3, SLC4A1	90kD	Anion exchanger F	erythrocytes, mRNA: epith, other tissues		anion pump, CO2 transport, linking membrane to cytoskeleton
CD234	Duffy, Dfy, DARC	36- 37kD		mRNA: spleen, BM, liver, brain, not erythrocytes		Duffy blood group antigen chemokine receptor
CD235a	Glycophorin A, Gypa	36kD		erythrocytes		one gene only in mouse for Glycophorin A
CD236F	Glycophorin C	32kD		erythrocytes		
CD238	Kell blood group, Kel	110kD		erythrocytes, mRNA: spleen		
CD239 (H)	B-CAM, Lu	78- 85kD	IgSF	mRNA: broad, erythrocytes		Lutheran blood group, B adhesion to laminin
CD240C (H)	Rhesus 30CE	30- 32kD		erythrocytes		Rh30CE & RH30D is one gene in the mouse: RH30
CD241	Rhesus 50, RhAg	50kD	TM12SF	erythrocytes		Rh antigens with CD47 & LW
CD242 (H)	ICAM-4, LW blood group	42kD	IgSF	erythrocytes		adhesion, Landsteiner- Wiener blood group
CD243	MDR-1, Abcb1, Pgp	170kD		T subset, stem cells, small intestine, kidney		ion pump, cytokine export, CTL function



CD244	2B4, Ly-90, Nmrk	78kD	Type II TM, IgSF	NK, NKT, LAK	NK activation, CD48 receptor, MHC-unrestricted killing
CD246	ALK, Ki-1	200kD	RTK family	mRNA: brain, not normal lymphocytes	anaplastic lymphoma kinase, brain development
CD247	TCR zeta, cd3z	16kD	RTK family	T, NK subset	TCR subunit, signaling, low level impaired immune function
CD248	TEM1, Endosialin	175kD	C-Type Lectin	endoth tissue	may function in tumor progression and angiogenesis
CD249 (H)	Aminopeptidase A			not defined in mouse	
CD252	OX-40 Ligand, gp34	35kD	TNFSF	Bact, cardiac myocytes	T-B interaction, T costimulation
CD253	TRAIL, APO-2L		TNFSF	NKact, liver NK	apoptosis
CD254	TRANCE, RANKL, OPGL	~35kD	TNFSF	Tact, osteoblasts	T-DC communication, osteoclast differentiation
CD256	APRIL, TALL-2	16kD	TNFSF	Tact, mono, mac	binds TACI and BCMA
CD257	BlyS, BAFF, TALL-1	45kD	TNFSF	mono	binds TACI, BCMA & BAFFR to induce B proliferation
CD258	LIGHT, HVEM-L	28kD	TNFSF	Tact, immature DC	binds LTBR to induce T proliferation, also binds HVEM
CD261 (H)	TRAIL-R1			not defined in mouse	

CD262	TRAIL-R2, DR5, Apo2, TRICK2, KILLER		TNFRSF	broad	ligand for TRAIL, activates NF- kappaB & mediates apoptosis, p53- dependent expression
CD263 (H)	TRAIL-R3			not defined in mouse	
CD264 (H)	TRAIL-R4			not defined in mouse	
CD265	RANK, TRANCE-R, ODFR	97kD	TNFRSF	broad expression	binding of TRANCE mediates osteoclastogene & T-DC interactions
CD266	TWEAK Receptor, Fn14	14kD	TNFRSF	mRNA in liver regeneration, Colon 26 cell line	cell migration, proliferation, angiogenesis, activates NF- kappaB pathway
CD267	TACI, TNFRSF13b	32kD	TNFRSF	Tact and B	binding of APRIL or BLYS stimulates B and T function
CD268	BAFFR, Bcmd	25kD	TNFRSF	B	BLYS binding promotes survival of mature B & B response
CD269	BCMA, TNFRSF13B	20kD	Type III TM, TNFRSF	mature B (membrane and perinuclear)	binds APRIL, BAFF, survival and proliferation

CD271	NGFR, TNFRSF16, p75 (NTR), Bex3, Ngfrap1	45kD	TNFRSF	neurons, mesenchymal stem cells	binds NGF, BDNF, NT-3 and NT-4, tumor suppressor mediate cell survival and death
CD272	BTLA, B & T Lymphocyte Associated	33kD	IgSF	T, B , BM, splenic macs, BM derived DC	binds HVEM, negative regulation
CD273	B7DC, PD- L2, PDCD1L2	25kD	IgSF	DC subset, mono, mac	binds PD-1, co- stimulation or suppression of T cell proliferation
CD274	B7-H1, PD- L1, PDCD1LG1	33kD	IgSF	leukocytes, decrease in mature thymic T cells	binds PD-1, proliferation and cytokine production
CD275	B7-H2, GL50, ICOS-L, B7h, B7RP- 1	60kD	B7 family	APC, B, DC, mac	lymphocyte costimulation, receptor for ICOS
CD276	B7-H3, B7RP-2	40- 45kD	B7 family	in vitro cultured DC and mono	negative regulator of T cell activation
CD277 (H)	BT3.1			not defined in mouse	
CD278	ICOS, Inducible T cell COStimulator , Ly115	55- 60kD	CD28 family	Tact, Th2	T costimulation, B7-H2 receptor, cytokine production

CD279	PD-1, programmed death-1	55kD	IgSF	Tact, Bact	negatively regulates lymphocytes, T cell development
CD280	ENDO180, UPARAP, MRC2	180kD	CD28 family	chondrocytes	binds uPAR, mannose receptor, collagen matrix remodeling & endocytic recycling
CD281	TLR1	90kD	TLR family	low levels in leukocytes	innate immunity, with TLR2
CD282	TLR2	90kD	TLR family	myeloid lineage: mac & DC in spleen	response to bacterial lipoproteins
CD283	TLR3	100kD	TLR family	DC subset, mac, fibroblasts, induced by LPS	binds dsRNA, activation of NK-kappaB
CD284	TLR4, Ly87, Ras12-8	100kD	TLR family, ASV	thioglycolate- elicited peritoneal mac	binds LPS, innate immunity
CD289	TLR9	120kD	TLR family	DC subset (intracellular)	binds CpG- DNA
CD292	BMPR1A, ALK3	57kD	Type I, BMP receptor	bone progenitor, broad	binds BMP 2 & 4, bone development, germ layer specification

CD293	BMPR1B, ALK6	57kD	Type I, BMP receptor	bone progenitor, developing retina	binds BMP, bone development, neurogenesis
CD294	CRTH2, GPR44	55- 70kD	GPCR- 7TM	Th2, eosinophils, basophils	binds prostaglandin D2, chemotaxis
CD295	LeptinR, LEPR	132kD	Type I cytokine- like receptor, ASV	broad	adipose metabolism, may be involved in immune dysfunction in obesity
CD296	ART1, RT6, ART2	37kD	ADP- ribosyltran	heart and skeletal muscle, peripheral T, NK subset	GPI linked protein modifies integrin during differentiation
CD297	ART4, dombrock blood group	38kD	ADP- ribosyltran	heart, lung, liver, and spleen, erythroid, monoact	
CD298	Na <sup>+</sup> /K <sup>+</sup> - ATPase beta3 subunit, ATP1B3	52kD		broad	transporter
CD299 (H)	DC-SIGN- related			not defined in mouse	
CD301- (H)				not defined in mouse	
CD303	Clecsf10, dectin-2		C-type lectin domain family 4	tissue mac, DC, upregulated on blood mono	inflammatory lesion, UV- induced tolerance
CD304	BDCA4,				
neuropil 1,					

Nrp, NP-1	130kD	semaph family	DC, neurons, endoth & tumor cells, CD4+/CD2 Treg	binds VEGF165, semaphorins, coreceptor with plexin, axonal guidance, angiogenesis, cell survival, migration	polyclonal inhibitory
CD305	LAIR1	32- 40kD	IgSF, ASV	broad, NK, B, T, mono	receptor on NK and T cells
CD306-: (H)				not defined in mouse	
CD309	VEGFR2, Flk-1, KDR	230kD	Type III TM tyr kinase	endoth, angiogenic precursor cells; hemangioblas	binds VEGF, regulates adhesion and cell signaling
CD312 (H)	EMR2			not defined in mouse	
CD314	NKG2D, KLRK1	42kD	Type II lectin-like receptor	NK, CD8+ activated, not CD4+ in the periphery, macact	binds MHC class I, Rae1 & ULBP4, cytolysis and cytokine production; costimulatory
CD315	CD9P1, SMAP6, FPRP, PTGFRN	135kD	IgSF	B subset, monoact	with CD81 and CD9
CD316	EWI2, PGRL, KASP	63- 75kD	TM4SF, IgSF8	B, T, low on NK cells	with CD81 & CD9; involved in cell migration
CD317	BST2	30- 36kD	Type II	BM stromals, fibroblasts, plasmacytoid DC	pre-B cell growth, overexpressed in multiple myeloma

CD318	CDCP1, CUB domain containing protein 1				
CD319	CRACC, SLAMF7	66kD	Ig TM 8D6, VLDL	predicted: T, B and DC subset, NK, upregulated in DC	regulate T and NK cells
CD320					
CD321	JAM1, F11 receptor, KAR	12.5kD	IgSF, Type I, AVS	epith and endoth, platelets	tight junction, binds reovirus & LFA1, platelet receptor
CD322	JAM2, VE-JAM	45kD	IgSF	HEV and other endothelia	mediates transendothelial migration of lymphocytes
CD324	E-Cadherin, Uvomorulin	120kD	cadherin SF	non-neural epith	binding to integrin alphaE/beta7 & homotypic interactions mediate cell adhesion
CD325	N-Cadherin, Cadherin-2	140kD	cadherin SF	brain, skeletal & cardiac muscle	adhesion, may be involved in neuronal recognition mechanism
CD326	Ep-CAM, EGP, Ly-74	40kD	thymocyte epith, DC	may function as growth factor receptor or adhesion molecule	
CD327 (H)	siglec6			not defined in mouse	
CD328 (H)	siglec7			not defined in mouse	

CD329	siglec9, siglecl1		IgSF	monocyte/mye cells	mediates sialic- acid dependent binding to cells
CD331	FGFR1, FLT2, N- SAM	30kD	TM tyr kinase	fibroblasts, epithelial	binds FGF, wound healing, bone development
CD332	FGFR2, KGFR, KSAM	115- 135kD	TM tyr kinase	fibroblasts, epithelial, ectoderm of embryo	binds FGF, embryonic limb development, AER
CD333	FGFR3, ACH, CEK2	115kD	TM tyr kinase, ASV	fibroblasts, epithelial, astrocytes	binds FGF, bone & CNS development
CD334	FGFR4, TKF	110kD	TM tyr kinase	fibroblasts, epithelial, hepatocytes	binds FGF, bone development
CD335	NKp46, Ly- 94 homolog	46kD	IgSF	NK	binds non- MHC, NK activation
CD336 (H)	NKp44			not defined in mouse	
CD337 (H)	Ncr3, IC7, Ly117			mouse IC7 mRNA in liver	
CD338	ABCG2, Mxr, ABC15, BCRP1	73kD	GPCR 7TM	stem cell subset (side population)	Multi-drug resistance transporter receptor for
CD339	Jagged-1, Serrate1	135kD	EGF TM	BM stromal & mac, stromal cell lines	Notch-1, 2, & 3, hematopoiesis, Th2 fate