

TABLE 372e-1 HUMAN LEUKOCYTE SURFACE ANTIGENS—THE CD CLASSIFICATION OF LEUKOCYTE DIFFERENTIATION ANTIGENS

Surface Antigen (Other Names)	Family	Molecular Mass, kDa	Distribution	Ligand(s)	Function
CD1a (T6, HTA-1)	Ig	49	CD, cortical thymocytes, Langerhans type of DCs	TCR $\gamma\delta$ T cells	CD1 molecules present lipid antigens of intracellular bacteria such as <i>Mycobacterium leprae</i> and <i>M. tuberculosis</i> to TCR $\gamma\delta$ T cells
CD1b	Ig	45	CD, cortical thymocytes, Langerhans type of DCs	TCR $\gamma\delta$ T cells	
CD1c	Ig	43	DC, cortical thymocytes, subset of B cells, Langerhans type of DCs	TCR $\gamma\delta$ T cells	
CD1d	Ig	37	Cortical thymocytes, intestinal epithelium, Langerhans type of DCs	TCR $\gamma\delta$ T cells	
CD2 (T12, LFA-2)	Ig	50	T, NK	CD58, CD48, CD59, CD15	Alternative T cell activation, T cell anergy, T cell cytokine production, T- or NK-mediated cytotoxicity, T cell apoptosis, cell adhesion
CD3 (T3, Leu-4)	Ig	γ :25–28, δ :21–28, ϵ :20–25, η :21–22, ζ :16	T	Associates with the TCR	T cell activation and function; ζ is the signal transduction component of the CD3 complex
CD4 (T4, Leu-3)	Ig	55	T, myeloid	MHC-II, HIV, gp120, IL-16, SABP	T cell selection, T cell activation, signal transduction with p56/ck, primary receptor for HIV
CD7 (3A1, Leu-9)	Ig	40	T, NK	K-12 (CD7L)	T and NK cell signal transduction and regulation of IFN- γ , TNF- α production
CD8 (T8, Leu-2)	Ig	34	T	MHC-I	T cell selection, T cell activation, signal transduction with p56/ck
CD14 (LPS-receptor)	LRG	53–55	M, G (weak), not by myeloid progenitors	Endotoxin (lipopolysaccharide), lipoteichoic acid, PI	TLR4 mediates with LPS and other PAMP activation of innate immunity
CD16 (FcyRIIIa)	Ig	50–80	NK, macrophages, neutrophils	Fc portion of IgG	Mediates phagocytosis and ADCC
CD19 B4	Ig	95	B (except plasma cells), FDC	Not known	Associates with CD21 and CD81 to form a complex involved in signal transduction in B cell development, activation, and differentiation
CD20 (B1)	Unassigned	33–37	B (except plasma cells)	Not known	Cell signaling, may be important for B cell activation and proliferation
CD21 (B2, CR2, EBV-R, C3dR)	RCA	145	Mature B, FDC, subset of thymocytes	C3d, C3dg, iC3b, CD23, EBV	Associates with CD19 and CD81 to form a complex involved in signal transduction in B cell development, activation, and differentiation; Epstein-Barr virus receptor
CD22 (BL-CAM)	Ig	130–140	Mature B	CDw75	Cell adhesion, signaling through association with p72sky, p53/56lyn, PI3 kinase, SHP1, fLCy
CD23 (FceRII, B6, Leu-20, BLAST-2)	C-type lectin	45	B, M, FDC	IgE, CD21, CD11b, CD11c	Regulates IgE synthesis, cytokine release by monocytes
CD28	Ig	44	T, plasma cells	CD80, CD86	Co-stimulatory for T cell activation; involved in the decision between T cell activation and anergy
CD32 (FcyRII)	Ig	40	NK, macrophages, neutrophils	Fc portion of IgG	Mediates phagocytosis and ADCC
CD40	TNFR	48–50	B, DC, EC, thymic epithelium, MP, cancers	CD154	B cell activation, proliferation, and differentiation; formation of GCs; isotype switching; rescue from apoptosis
CD45 (LCA, T200, B220)	PTP	180, 200, 210, 220	All leukocytes	Galectin-1, CD2, CD3, CD4	T and B activation, thymocyte development, signal transduction, apoptosis
CD45RA	PTP	210, 220	Subset T, medullary thymocytes, "naive" T	Galectin-1, CD2, CD3, CD4	Isoforms of CD45 containing exon 4 (A), restricted to a subset of T cells
CD45RB	PTP	200, 210, 220	All leukocytes	Galectin-1, CD2, CD3, CD4	Isoforms of CD45 containing exon 5 (B)
CD45RC	PTP	210, 220	Subset T, medullary thymocytes, "naive" T	Galectin-1, CD2, CD3, CD4	Isoforms of CD45 containing exon 6 (C), restricted to a subset of T cells
CD45RO	PTP	180	Subset T, cortical thymocytes, "memory" T	Galectin-1, CD2, CD3, CD4	Isoforms of CD45 containing no differentially spliced exons, restricted to a subset of T cells

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