

CD1 (M-276): sc-9161

BACKGROUND

The CD1 multigene family encodes five forms of the CD1 T-cell surface glycoprotein in human, designated CD1A, 1B, 1C, 1D and 1E. CD1, a type 1 membrane protein, has structural similarity to the MHC class I antigen and has been shown to present lipid antigens for recognition by T lymphocytes. CD1 antigens are associated with β -2-microglobulin and expressed on cortical thymocytes, Langerhans cells, a B cell subset and some dendritic cells. Specifically, CD1A is a marker for Langerhans cell histiocytosis (LCH) and is found on interdigitating cells. Adaptor-protein complexes and CD1-associated chaperones control CD1 trafficking, and the development and activation of CD1-restricted T cells. Constitutive endocytosis of CD1B molecules and the differential sorting of MHC class II from lysosomes separate peptide- and lipid antigen-presenting molecules during dendritic cell maturation. CD1B is also expressed in interdigitating cells. The human CD1 genes are all closely linked in a cluster mapping at chromosome 1q 22-23.

REFERENCES

1. Martin, L.H., et al. 1987. Structure and expression of the human thymocyte antigens CD1a, CD1b, and CD1c. *Proc. Natl. Acad. Sci. USA* 84: 9189-9193.
2. Aruffo, A., et al. 1989. Expression of cDNA clones encoding the thymocyte antigens CD1A, B, C demonstrates a hierarchy of exclusion in fibroblasts. *J. Immunol.* 143: 1723-1730.
3. Longley, J., et al. 1989. Molecular cloning of CD1A (T6), a human epidermal dendritic cell marker related to class I MHC molecules. *J. Invest. Dermatol.* 92: 628-631.
4. Sotzik, F., et al. 1993. Surface antigens of human thymocyte populations defined by CD3, CD4 and CD8 expression: CD1A is expressed by mature thymocytes but not peripheral T cells. *Immunol. Lett.* 36: 101-106.
5. Porcelli, S.A. 1995. The CD1 family: a third lineage of antigen-presenting molecules. *Adv. Immunol.* 59: 1-18.
6. Melian, A., et al. 1996. Antigen presentation by CD1 and MHC-encoded class I-like molecules. *Curr. Opin. Immunol.* 8: 82-88.

CHROMOSOMAL LOCATION

Genetic locus: Cd1d2 (mouse) mapping to 3 F1.

SOURCE

CD1 (M-276) is a rabbit polyclonal antibody raised against amino acids 22-297 of CD1 of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

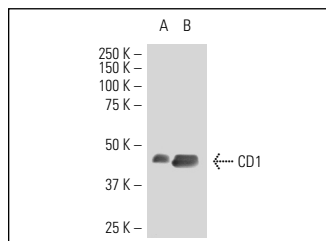
CD1 (M-276) is recommended for detection of all CD1 isoforms of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CD1 siRNA (m): sc-42743, CD1 shRNA Plasmid (m): sc-42743-SH and CD1 shRNA (m) Lentiviral Particles: sc-42743-V.

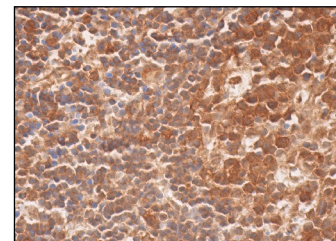
Molecular Weight of CD1: 44 kDa.

Positive Controls: rat liver extract: sc-2395 or mouse liver extract: sc-2256.

DATA



CD1 (M-276): sc-9161. Western blot analysis of CD1 expression in mouse liver (A) and rat liver (B) tissue extracts.



CD1 (M-276): sc-9161. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing cytoplasmic staining of cells in germinal and non-germinal centers.

SELECT PRODUCT CITATIONS

1. Maciejewski-Lenoir, D., et al. 2006. Langerhans cells release prostaglandin D2 in response to nicotinic acid. *J. Invest. Dermatol.* 126: 2637-2646.
2. Liang, S., et al. 2006. Human ILT2 receptor associates with murine MHC class I molecules *in vivo* and impairs T cell function. *Eur. J. Immunol.* 36: 2457-2471.
3. Almolda, B., et al. 2010. Activated microglial cells acquire an immature dendritic cell phenotype and may terminate the immune response in an acute model of EAE. *J. Neuroimmunol.* 223: 39-54.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.