

# CD1 (Q-19): sc-7093

## 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  $\beta$ -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.
7. Storkus, W.J., et al. 1996. Class I-like CD1A-C do not protect target cells from NK-mediated cytotoxicity. *Cell. Immunol.* 167: 154-156.

## SOURCE

CD1 (Q-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of CD1 of mouse origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-7093 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

CD1 (Q-19) 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  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (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.

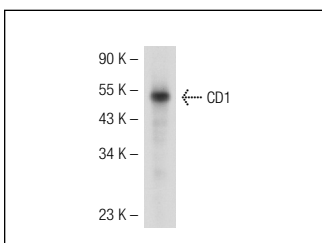
Molecular Weight of CD1: 44 kDa.

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

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



CD1 (Q-19): sc-7093. Western blot analysis of CD1 expression in mouse liver tissue extract.

## SELECT PRODUCT CITATIONS

1. Confalonieri, S., et al. 2000. Tyrosine phosphorylation of Eps15 is required for ligand-regulated, but not constitutive, endocytosis. *J. Cell Biol.* 150: 905-912.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.