

CD1A (N-19): sc-7092

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. Aruffo, A. and Seed, B. 1989. Expression of cDNA clones encoding the thymocyte antigens CD1A, B, C demonstrates a hierarchy of exclusion in fibroblasts. *J. Immunol.* 143: 1723-1730.
2. Longley, J., Kraus, J., Alonso, M. and Edelson, R. 1989. Molecular cloning of CD1A (T6), a human epidermal dendritic cell marker related to class I MHC molecules. *J. Invest. Dermatol.* 92: 628-631.
3. Sotzik, F., Boyd, A. and Shortman, K. 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.
4. Porcelli, S.A. 1995. The CD1 family: a third lineage of antigen-presenting molecules. *Adv. Immunol.* 59: 1-18.
5. Melian, A., Beckman, E.M., Porcelli, S.A. and Brenner, M.B. 1996. Antigen presentation by CD1 and MHC-encoded class I-like molecules. *Curr. Opin. Immunol.* 8: 82-88.
6. Storkus, W.J., Wei, M., Cresswell, P. and Dawson, J.R. 1996. Class I-like CD1A-C do not protect target cells from NK-mediated cytotoxicity. *Cell. Immunol.* 167: 154-156.

CHROMOSOMAL LOCATION

Genetic locus: CD1A (human) mapping to 1q23.1.

SOURCE

CD1A (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of CD1A of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-7092 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CD1A (N-19) is recommended for detection of CD1A of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 CD1A siRNA (h): sc-42744, CD1A shRNA Plasmid (h): sc-42744-SH and CD1A shRNA (h) Lentiviral Particles: sc-42744-V.

Molecular Weight of CD1A: 49 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233.

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) 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.

SELECT PRODUCT CITATIONS

1. Jain, P., Ahuja, J., Khan, Z.K., Shimizu, S., Meucci, O., Jennings, S.R. and Wigdahl, B. 2007. Modulation of dendritic cell maturation and function by the TAX protein of human T cell leukemia virus type 1. *J. Leukoc. Biol.* 82: 44-56.
2. Silva, M.A., Quera, R., Valenzuela, J., Salim, S.Y., Söderholm, J.D. and Perdue, M.H. 2008. Dendritic cells and toll-like receptors 2 and 4 in the ileum of Crohn's disease patients. *Dig. Dis. Sci.* 53: 1917-1928.

STORAGE

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

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.



Try **CD1A (O10): sc-18885** or **CD1A (CTB6): sc-5265**, our highly recommended monoclonal alternatives to CD1A (N-19). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **CD1A (O10): sc-18885**.