

CD1 (76-7-4): sc-52454

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. 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.
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.
8. Bauer, A., et al. 1997. Analysis of the requirement for β 2-microglobulin for expression and formation of human CD1 antigens. Eur. J. Immunol. 27: 1366-1373.
9. Brigl, M., et al. 2004. CD1: antigen presentation and T cell function. Annu. Rev. Immunol. 22: 817-890.

SOURCE

CD1 (76-7-4) is a mouse monoclonal antibody raised against CD1 of porcine origin.

STORAGE

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

PRODUCT

Each vial contains 100 μ g IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD1 (76-7-4) is available conjugated fluorescein (sc-52454 FITC, 200 μ g/ml), for IF, IHC(P) and FCM.

APPLICATIONS

CD1 (76-7-4) is recommended for detection of CD1 of porcine origin by 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) and flow cytometry (1 μ g per 1×10^6 cells).

Molecular Weight of CD1: 44 kDa.

RESEARCH USE

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

PROTOCOLS

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