

# CD1B (O249): sc-19997

## 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 1q23.1.

## REFERENCES

1. Martin, L.H., et al. 1987. Structure and expression of the human thymocyte antigens CD1A, CD1C, and CD1E. *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  $\beta$ 2-microglobulin for expression and formation of human CD1 antigens. *Eur. J. Immunol.* 27: 1366-1373.

## CHROMOSOMAL LOCATION

Genetic locus: CD1B (human) mapping to 1q23.1.

## SOURCE

CD1B (O249) is a mouse monoclonal antibody raised against thymic cells of human 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 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD1B (O249) is available conjugated to agarose (sc-19997 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-19997 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-19997 PE), fluorescein (sc-19997 FITC), Alexa Fluor<sup>®</sup> 488 (sc-19997 AF488), Alexa Fluor<sup>®</sup> 546 (sc-19997 AF546), Alexa Fluor<sup>®</sup> 594 (sc-19997 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-19997 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-19997 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-19997 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

CD1B (O249) is recommended for detection of CD1B of human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1  $\mu$ g per  $1 \times 10^6$  cells).

Suitable for use as control antibody for CD1B siRNA (h): sc-42745, CD1B shRNA Plasmid (h): sc-42745-SH and CD1B shRNA (h) Lentiviral Particles: sc-42745-V.

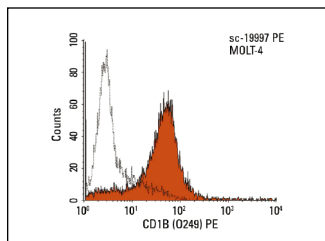
Molecular Weight of CD1B: 45 kDa.

## RECOMMENDED SUPPORT REAGENTS

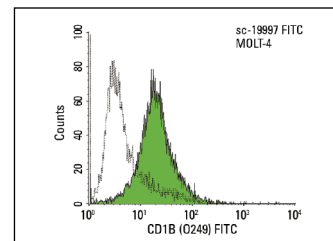
To ensure optimal results, the following support reagents are recommended:

1) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



CD1B (O249) PE: sc-19997 PE. FCM analysis of MOLT-4 cells. Black line histogram represents the isotype control, normal mouse IgG<sub>1</sub>-PE: sc-2866.



CD1B (O249) FITC: sc-19997 FITC. FCM analysis of MOLT-4 cells. Black line histogram represents the isotype control, normal mouse IgG<sub>1</sub>-FITC: sc-2855.

## SELECT PRODUCT CITATIONS

1. Lepore, M., et al. 2014. A novel self-lipid antigen targets human T cells against CD1c<sup>+</sup> leukemias. *J. Exp. Med.* 211: 1363-1377.

## RESEARCH USE

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