

# CD1D (G-10): sc-271340

## 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. Adaptor protein complexes and CD1-associated chaperones control CD1 trafficking and the development and activation of CD1-restricted T cells. CD1D is present on human intestinal epithelial cells (IEC) and exists as a  $\beta$ -2-Microglobulin-independent nonglycosylated form or a  $\beta$ -2-Microglobulin-dependent glycosylated form. The human CD1D gene maps to chromosome 1q23.1 and encodes a 335 amino acid protein that influences normal T cell maturation.

## REFERENCES

1. Balk, S.P., et al. 1989. Isolation and characterization of a cDNA and gene coding for a fourth CD1 molecule. *Proc. Natl. Acad. Sci. USA* 86: 252-256.
2. Calabi, F., et al. 1989. Two classes of CD1 genes. *Eur. J. Immunol.* 19: 285-292.
3. Bilsland, C.A., et al. 1991. The identification of the  $\beta$ -2-Microglobulin binding antigen encoded by the human CD1D gene. *Eur. J. Immunol.* 21: 71-78.
4. Balk, S.P., et al. 1994.  $\beta$ -2-Microglobulin-independent MHC class Ib molecule expressed by human intestinal epithelium. *Science* 265: 259-262.
5. Porcelli, S.A. 1995. The CD1 family: a third lineage of antigen-presenting molecules. *Adv. Immunol.* 59: 1-98.
6. Melian, A., et al. 1996. Antigen presentation by CD1 and MHC-encoded class I-like molecules. *Curr. Opin. Immunol.* 8: 82-88.
7. 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.
8. Kim, H.S., et al. 2000. Human CD1D associates with prolyl-4-hydroxylase during its biosynthesis. *Mol. Immunol.* 37: 861-868.

## CHROMOSOMAL LOCATION

Genetic locus: CD1D (human) mapping to 1q23.1.

## SOURCE

CD1D (G-10) is a mouse monoclonal antibody raised against amino acids 71-140 mapping near the N-terminus of CD1D of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## RESEARCH USE

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

## APPLICATIONS

CD1D (G-10) is recommended for detection of CD1D of human origin by Western Blotting (starting dilution 1:100, 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 CD1D siRNA (h): sc-42747, CD1D shRNA Plasmid (h): sc-42747-SH and CD1D shRNA (h) Lentiviral Particles: sc-42747-V.

Molecular Weight of CD1D: 37 kDa.

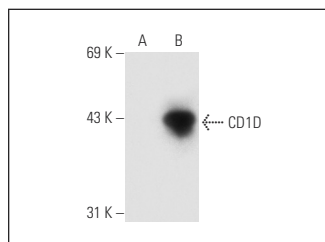
Molecular Weight of glycosylated CD1D: 50-55 kDa.

Positive Controls: CD1D (h): 293T Lysate: sc-114220, Jurkat whole cell lysate: sc-2204 or CCRF-CEM cell lysate: sc-2225.

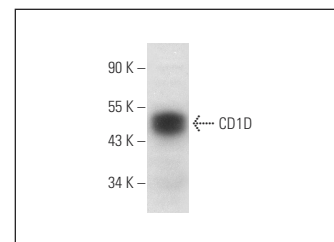
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 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 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



CD1D (G-10): sc-271340. Western blot analysis of CD1D expression in non-transfected: sc-117752 (A) and human CD1D transfected: sc-114220 (B) 293T whole cell lysates.



CD1D (G-10): sc-271340. Western blot analysis of CD1D expression in Jurkat whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Wu, M., et al. 2020. Depletion of NK cells attenuates paraquat-induced acute lung injury by manipulating macrophage polarization. *Int. Immunopharmacol.* 86: 106698.

## STORAGE

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