

# CD1A (O10): sc-18885



The Power to Question

## 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 to chromosome 1q23.1.

## CHROMOSOMAL LOCATION

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

## SOURCE

CD1A (O10) is a mouse monoclonal antibody raised against human thymus cells.

## 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.

CD1A (O10) is available conjugated to agarose (sc-18885 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-18885 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-18885 PE), fluorescein (sc-18885 FITC), Alexa Fluor<sup>®</sup> 488 (sc-18885 AF488), Alexa Fluor<sup>®</sup> 546 (sc-18885 AF546), Alexa Fluor<sup>®</sup> 594 (sc-18885 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-18885 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-18885 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-18885 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

CD1A (O10) is recommended for detection of CD1A of human 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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.

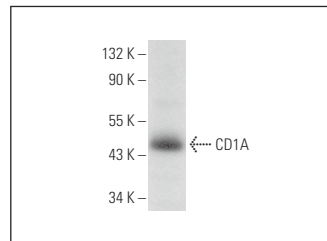
Molecular Weight of CD1A: 49 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233 or human fetal thymus tissue extract.

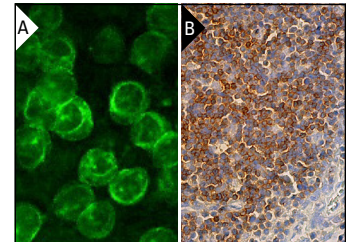
## STORAGE

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

## DATA



CD1A (O10): sc-18885. Western blot analysis of CD1A expression in human fetal thymus tissue extract.



CD1A (O10): sc-18885. Immunofluorescence staining of methanol-fixed MOLT-4 cells showing membrane staining (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human fetal thymus tissue showing membrane and cytoplasmic staining of cortical cells (B).

## SELECT PRODUCT CITATIONS

- Cassaday, R.D., et al. 2007. A phase I study of immunization using particle-mediated epidermal delivery of genes for gp100 and GM-CSF into uninvolved skin of melanoma patients. *Clin. Cancer Res.* 13: 540-549.
- Gulubova, M., et al. 2008. Recruitment of dendritic cells in human liver with metastases. *Clin. Exp. Metastasis* 25: 777-785.
- Matsuda, A., et al. 2009. Hyperexpression of the high-affinity IgE receptor- $\beta$  chain in chronic allergic keratoconjunctivitis. *Invest. Ophthalmol. Vis. Sci.* 50: 2871-2877.
- Matsuda, A., et al. 2010. Basophils in the giant papillae of chronic allergic keratoconjunctivitis. *Br. J. Ophthalmol.* 94: 513-518.
- McNally, A.K., et al. 2011. Foreign body-type multinucleated giant cells induced by interleukin-4 express select lymphocyte co-stimulatory molecules and are phenotypically distinct from osteoclasts and dendritic cells. *Exp. Mol. Pathol.* 91: 673-681.
- Prado, A.A., et al. 2015. Characterization of mesenchymal stem cells derived from the equine synovial fluid and membrane. *BMC Vet. Res.* 11: 281.
- Bock, S., et al. 2018. Characterization of reconstructed human skin containing Langerhans cells to monitor molecular events in skin sensitization. *Toxicol. In Vitro* 46: 77-85.
- Bolognesi, M.M., et al. 2021. Antibodies validated for routinely processed tissues stain frozen sections unpredictably. *Biotechniques* 70: 137-148.

## 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) for detailed protocols and support products.