SANTA CRUZ BIOTECHNOLOGY, INC.

HLA-DM (MaP.DM1): sc-32248

BACKGROUND

Peptide (antigen) binding to major histocompatibility complex (MHC) class II molecules destined for presentation to $CD4^+$ helper T cells is determined by two key events. These include the dissociation of class II-associated invariant chain peptides (CLIP) from an antigen binding groove in MHC II-Iγ dimers and by the activity of MHC molecules HLA-DM and -DO. Accumulating in endosomal/lysosomal compartments and on the surface of B cells, HLA-DM, -DO molecules regulate the dissociation of CLIP and the subsequent binding of exogenous peptides to HLA class II molecules (HLA-DR) by sustaining a conformation that favors peptide exchange. RFLP analysis of HLA-DM genes from rheumatoid arthritis (RA) patients suggests that certain polymorphisms are genetic factors for RA susceptibility.

REFERENCES

1. Kropshofer, H., et al. 1998. A role for HLA-DO as a co-chaperone of HLA-DM in peptide loading of MHC class II molecules. EMBO J. 17: 2971-2981.
2. Siegmund, T., et al. 1999. HLA-DMA and HLA-DMB alleles in German patients with type 1 diabetes mellitus. Tissue Antigens 54: 291-294.
3. Arndt, S.O., et al. 2000. Functional HLA-DM on the surface of B cells and immature dendritic cells. EMBO J. 19: 1241-1251.
4. Brunet, A., et al. 2000. Functional characterization of a lysosomal sorting motif in the cytoplasmic tail of HLA-DO β. J. Biol. Chem. 275: 37062-37071.
5. Doebele, C.R., et al. 2000. Determination of the HLA-DM interaction site on HLA-DR molecules. Immunity 13: 517-527.
6. Louis-Plence, P., et al. 2000. The down-regulation of HLA-DM gene expression in rheumatoid arthritis is not related to their promoter polymorphism. J. Immunol. 165: 4861-4869.
7. Toussirot, E., et al. 2000. The association of HLA-DM genes with rheumatoid arthritis in Eastern France. Hum. Immunol. 61: 303-308.

CHROMOSOMAL LOCATION

Genetic locus: HLA-DMA (human) mapping to 6p21.32.

SOURCE

HLA-DM (MaP.DM1) is a mouse monoclonal antibody raised against MHC class II-enriched compartments of human B cells.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HLA-DM (MaP.DM1) is available conjugated to agarose (sc-32248 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-32248 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32248 PE), fluorescein (sc-32248 FITC), Alexa Fluor® 488 (sc-32248 AF488), Alexa Fluor® 546 (sc-32248 AF546), Alexa Fluor® 594 (sc-32248 AF594) or Alexa Fluor® 647 (sc-32248 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32248 AF680) or Alexa Fluor® 790 (sc-32248 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

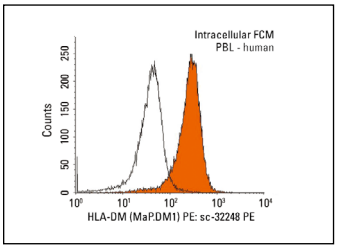
HLA-DM (MaP.DM1) is recommended for detection of HLA-DM of human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Molecular Weight of HLA-DM: 29 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



HLA-DM (MaP.DM1) PE: sc-32248 PE. Intracellular FCM analysis of fixed and permeabilized human peripheral blood leukocytes. Black line histogram represents the isotype control, normal mouse IgG_1-PE: sc-2866.

SELECT PRODUCT CITATIONS

1. Fougeray, S., et al. 2012. Tryptophan depletion and the kinase GCN2 mediate IFN-γ-induced autophagy. J. Immunol. 189: 2954-2964.
2. Brooks, C.R., et al. 2015. KIM-1/TIM-1-mediated phagocytosis links ATG5/ULK1-dependent clearance of apoptotic cells to antigen presentation. EMBO J. 34: 2441-2464.
3. Jin, H., et al. 2022. Abrogation of self-tolerance by misfolded self-antigens complexed with MHC class II molecules. Sci. Adv. 8: eabj9867.
4. Sarango, G., et al. 2022. The autophagy receptor TAX1BP1 (T6BP) improves antigen presentation by MHC-II molecules. EMBO Rep. 23: e55470.
5. Stražar, M., et al. 2023. HLA-II immunopeptidome profiling and deep learning reveal features of antigenicity to inform antigen discovery. Immunity 56: 1681-1698.e13.

STORAGE

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

PRESEARCH USE

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