

HLA-DR α (G-7): sc-55593

BACKGROUND

Major histocompatibility complex (MHC) class II molecules destined for presentation to CD4⁺ helper T cells is determined by two key events. These events include the dissociation of class II-associated invariant chain peptides (CLIP) from an antigen binding groove in MHC II- α/β dimers through the activity of MHC molecules HLA-DM and -DO, and subsequent peptide antigen binding. 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, -DQ and -DP) 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. HLA-B belongs to the HLA class I heavy chain paralogs. Class I molecules play a central role in the immune system by presenting peptides derived from the endoplasmic reticulum lumen. HLA-B and -C can form heterodimers consisting of a membrane-anchored heavy chain and a light chain (β -2-Microglobulin). Polymorphisms yield hundreds of HLA-B and -C alleles.

REFERENCES

- Horejsi, V., et al. 1986. Characterization of seven new monoclonal antibodies against human DR, DR + DP and DQ1 + DQ3 antigens. *Tissue Antigens* 28: 288-297.
- Horejsi, V., et al. 1986. Monoclonal antibodies against human leucocyte antigens. I. Antibodies against β -2-Microglobulin, immunoglobulin κ light chains, HLA-DR-like antigens, T8 antigen, T1 antigen, a monocyte antigen, and a pan-leucocyte antigen. *Folia Biol.* 32: 12-25.

CHROMOSOMAL LOCATION

Genetic locus: HLA-DRA (human) mapping to 6p21.32; H2-Ea-ps (mouse) mapping to 17 B1.

SOURCE

HLA-DR α (G-7) is a mouse monoclonal antibody raised against amino acids 1-254 representing full length HLA-DR α of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HLA-DR α (G-7) is available conjugated to agarose (sc-55593 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-55593 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-55593 PE), fluorescein (sc-55593 FITC), Alexa Fluor[®] 488 (sc-55593 AF488), Alexa Fluor[®] 546 (sc-55593 AF546), Alexa Fluor[®] 594 (sc-55593 AF594) or Alexa Fluor[®] 647 (sc-55593 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-55593 AF680) or Alexa Fluor[®] 790 (sc-55593 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

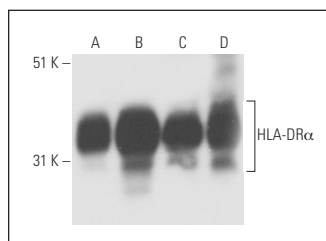
HLA-DR α (G-7) is recommended for detection of HLA-DR α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:200-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 HLA-DR α siRNA (h): sc-37113, HLA-DR α siRNA (m): sc-37114, HLA-DR α shRNA Plasmid (h): sc-37113-SH, HLA-DR α shRNA Plasmid (m): sc-37114-SH, HLA-DR α shRNA (h) Lentiviral Particles: sc-37113-V and HLA-DR α shRNA (m) Lentiviral Particles: sc-37114-V.

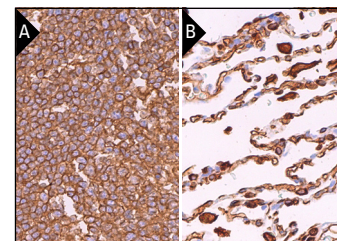
Molecular Weight of HLA-DR α : 34 kDa.

Positive Controls: Ramos cell lysate: sc-2216, Raji whole cell lysate: sc-364236 or BJAB whole cell lysate: sc-2207.

DATA



HLA-DR α (G-7): sc-55593. Western blot analysis of HLA-DR α expression in Ramos (A), Raji (B), BJAB (C) and IB4 (D) whole cell lysates.



HLA-DR α (G-7): sc-55593. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing membrane and cytoplasmic staining of cells in germinal center and cells in non-germinal center (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing membrane and cytoplasmic staining of Pneumocytes and Macrophages (B).

SELECT PRODUCT CITATIONS

- Li, D., et al. 2009. Down-regulation of MHC class II expression through inhibition of CIITA transcription by lytic transactivator Zta during Epstein-Barr virus reactivation. *J. Immunol.* 182: 1799-1809.
- Grabowska, K., et al. 2020. Alphaherpesvirus gB homologs are targeted to extracellular vesicles, but they differentially affect MHC class II molecules. *Viruses* 12: 429.
- Inoue, A., et al. 2022. TRIM22 negatively regulates MHC-II expression. *Biochim. Biophys. Acta Mol. Cell Res.* 1869: 119318.
- Mukherjee, S., et al. 2023. Macrophage differentiation is marked by increased abundance of the mRNA 3' end processing machinery, altered poly(A) site usage, and sensitivity to the level of CstF64. *Front. Immunol.* 14: 1091403.

STORAGE

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