

HLA-DR β (DA2): sc-53314

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.
- 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.

CHROMOSOMAL LOCATION

Genetic locus: HLA-DRB1 (human) mapping to 6p21.32.

SOURCE

HLA-DR β (DA2) is a mouse monoclonal antibody raised against the membranes of LKT cells (a B lymphoblastoid cell line).

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 β (DA2) is available conjugated to agarose (sc-53314 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53314 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53314 PE), fluorescein (sc-53314 FITC), Alexa Fluor[®] 488 (sc-53314 AF488), Alexa Fluor[®] 546 (sc-53314 AF546), Alexa Fluor[®] 594 (sc-53314 AF594) or Alexa Fluor[®] 647 (sc-53314 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-53314 AF680) or Alexa Fluor[®] 790 (sc-53314 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

HLA-DR β (DA2) is recommended for detection of HLA-DR β of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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) and flow cytometry (1 μ g per 1 x 10⁶ cells).

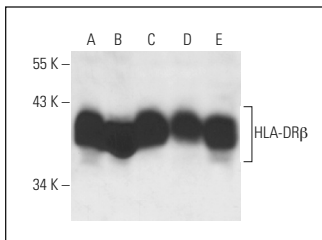
Molecular Weight of mature chain HLA-DR β : 30 kDa.

Positive Controls: Daudi cell lysate: sc-2415, HLA-DR β (h3): 293T lysate: sc-115102 or Raji whole cell lysate: sc-364236.

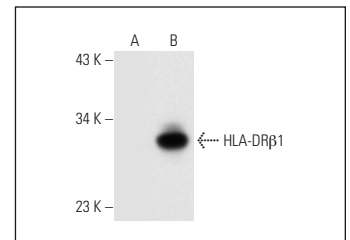
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] 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 κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



HLA-DR β (DA2): sc-53314. Western blot analysis of HLA-DR β expression in Raji (A), Daudi (B), U-698-M (C), NAMALWA (D) and HuT 78 (E) whole cell lysates.



HLA-DR β (DA2): sc-53314. Western blot analysis of HLA-DR β 1 expression in non-transfected: sc-117752 (A) and human HLA-DR β 1 transfected: sc-115102 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Schreeder, D.M., et al. 2010. Cutting edge: FcR-like 6 is an MHC class II receptor. *J. Immunol.* 185: 23-27.
- Crivello, P., et al. 2019. Multiple knockout of classical HLA class II β -chains by CRISPR/Cas9 genome editing driven by a single guide RNA. *J. Immunol.* 202: 1895-1903.
- Houtman, M., et al. 2022. Five commercially-available antibodies react differentially with allelic forms of human HLA-DR β chain. *Mol. Immunol.* 152: 106-110.

STORAGE

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

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