

# HLA-DR $\beta$ (TAL 14.1): sc-53316

## BACKGROUND

Major histocompatibility complex (MHC) class II molecules destined for presentation to CD4<sup>+</sup> 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- $\alpha/\beta$  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 ( $\beta$ -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  $\beta$ -2-Microglobulin, immunoglobulin  $\kappa$  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.
- Siegmund, T., et al. 1999. HLA-DMA and HLA-DMB alleles in German patients with type 1 diabetes mellitus. *Tissue Antigens* 54: 291-294.

## CHROMOSOMAL LOCATION

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

## SOURCE

HLA-DR $\beta$  (TAL 14.1) is a mouse monoclonal antibody raised against HLA-DR $\beta$  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.

HLA-DR $\beta$  (TAL 14.1) is available conjugated to either phycoerythrin (sc-53316 PE) or fluorescein (sc-53316 FITC), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM.

## STORAGE

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

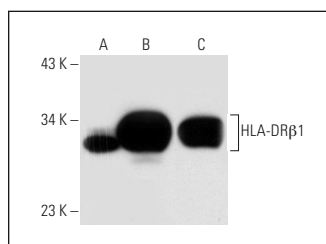
## APPLICATIONS

HLA-DR $\beta$  (TAL 14.1) is recommended for detection of HLA-DR $\beta$  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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1  $\mu$ g per 1 x 10<sup>6</sup> cells).

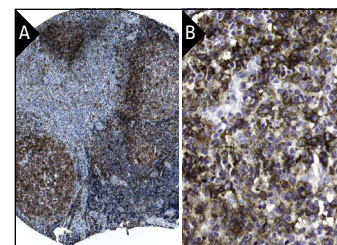
Molecular Weight of HLA-DR $\beta$ : 30 kDa.

Positive Controls: HLA-DR $\beta$  (h3): 293T Lysate: sc-115102, NAMALWA cell lysate: sc-2234 or BJAB whole cell lysate: sc-2207.

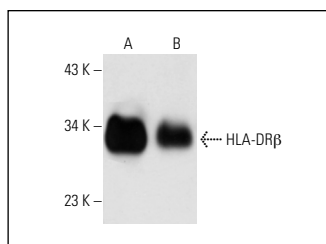
## DATA



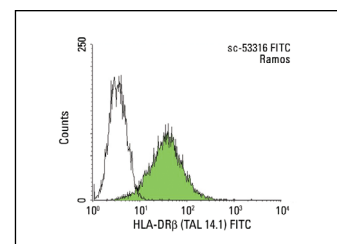
HLA-DR $\beta$  (TAL 14.1): sc-53316. Western blot analysis of HLA-DR $\beta$ 1 expression in non-transfected 293T: sc-117752 (A), human HLA-DR $\beta$ 1 transfected 293T: sc-115102 (B) and BJAB (C) whole cell lysates.



HLA-DR $\beta$  (TAL 14.1): sc-53316. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing cytoplasmic and membrane staining of follicle and non-follicle cells at low (A) and high (B) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.



HLA-DR $\beta$  (TAL 14.1): sc-53316. Western blot analysis of HLA-DR $\beta$  expression in BJAB (A) and JM1 (B) whole cell lysates.



HLA-DR $\beta$  (TAL 14.1) FITC: sc-53316 FITC. FCM analysis of Ramos cells. Black line histogram represents the isotype control, normal mouse IgG<sub>2a</sub>-FITC: sc-2856.

## SELECT PRODUCT CITATIONS

- Kaushansky, N., et al. 2015. Role of a novel human leukocyte antigen-DQA1\*01:02;DRB1\*15:01 mixed isotype heterodimer in the pathogenesis of Humanized multiple sclerosis-like disease. *J. Biol. Chem.* 290: 15260-15278.
- Grabowska, K., et al. 2020. Alpha herpesvirus gB homologs are targeted to extracellular vesicles, but they differentially affect MHC class II molecules. *Viruses* 12 pii: E429.

## RESEARCH USE

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