SANTA CRUZ BIOTECHNOLOGY, INC.

HLA-DPα1 (NB-A3): sc-134358

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 class IIa/b 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 and -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

1. Heyes, J., et al. 1986. Monoclonal antibodies to HLA-DP-transfected mouse L cells. Proc. Natl. Acad. Sci. USA 83: 3417-3421.
2. 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.
3. Siegmund, T., et al. 1999. HLA-DM α and HLA-DM β alleles in German patients with type 1 diabetes mellitus. Tissue Antigens 54: 291-294.
4. Arndt, S.O., et al. 2000. Functional HLA-DM on the surface of B cells and immature dendritic cells. EMBO J. 19: 1241-1251.
5. 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.
6. Doebele, R.C., et al. 2000. Determination of the HLA-DM interaction site on HLA-DR molecules. Immunity 13: 517-527.
7. Louis-Plence, P., et al. 2000. The downregulation of HLA-DM gene expression in rheumatoid arthritis is not related to their promoter polymorphism. J. Immunol. 16: 4861-4869.
8. 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-DPA1 (human) mapping to 6p21.32.

SOURCE

HLA-DPα1 (NB-A3) is a mouse monoclonal antibody raised against recombinant HLA-DPα1 protein of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

HLA-DPα1 (NB-A3) is recommended for detection of HLA-DPα1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HLA-DPα1 siRNA (h): sc-95353, HLA-DPα1 shRNA Plasmid (h): sc-95353-SH and HLA-DPα1 shRNA (h) Lentiviral Particles: sc-95353-V.

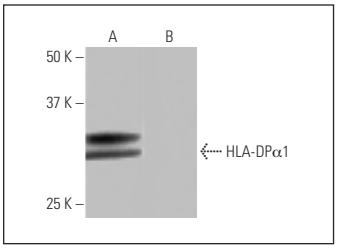
Molecular Weight of HLA-DPα1: 29 kDa.

Positive Controls: human HLA-DPα1 transfected 293T whole cell lysate.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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).

DATA



HLA-DPα1 (NB-A3): sc-134358. Western blot analysis of HLA-DPα1 expression in human HLA-DPα1 transfected (**A**) and non-transfected (**B**) 293T whole cell lysates.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.