SANTA CRUZ BIOTECHNOLOGY, INC.

HLA-DQ (TAL 4.1): sc-53312

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 ii-a/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, -DO molecules regulate the dissociation of CLIP and the subsequent binding of exogenous peptides to HLA class II molecules (HLA-DR, DQ, DP and 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. The a one chain of HLA-DQ1 class II molecule (Ia antigen) complex can bind peptides and present them to CD4+ T lymphocytes.

REFERENCES

1. Corte, G., Calabi, F., Damiani, G., Bargellesi, A., Tosi, R. and Sorrentino, R. 1981. Human Ia molecules carrying DC1 determinants differ in both α- and β-subunits from Ia molecules carrying DR determinants. Nature 292: 357-360.
2. Bodmer, J.G. and Bodmer, W.F. 1984. Monoclonal antibodies to HLA determinants. Br. Med. Bull. 40: 267-275.
3. Horejsi, V., Nemec, M., Angelisova, P., Kristofova, H., Gorga, J.C. and Hilgert, I. 1986. Characterization of seven new monoclonal antibodies against human DR, DR + DP and DQ1 + DQ3 antigens. Tissue Antigens 28: 288-297.
4. Momburg, F., Herrmann, B., Moldenhauer, G. and Moller, P. 1987. B cell lymphomas of high-grade malignancy frequently lack HLA-DR, -DP and -DQ antigens and associated invariant chain. Int. J. Cancer 40: 598-603.
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6. Siegmund, T., Donner, H., Braun, J., Usadel, K.H. and Badenhoop, K. 1999. HLA-DMA and HLA-DMB alleles in German patients with type 1 diabetes mellitus. Tissue Antigens 54: 291-294.
7. Brunet, A., Samaan, A., Deshaies, F., Kindt, T.J. and Thibodeau, J. 2000. Functional characterization of a lysosomal sorting motif in the cytoplasmic tail of HLA-DOβ. J. Biol. Chem. 275: 37062-37071.
8. Doebele, C.R., Busch, R., Scott, M.H., Pashine, A. and Mellins, D.E. 2000. Determination of the HLA-DM interaction site on HLA-DR molecules. Immunity 13: 517-527.
9. Toussirot, E., Sauvageot, C., Chabod, J., Ferrand, C., Tiberghien, P. and Wendling, D. 2000. The association of HLA-DM genes with rheumatoid arthritis in Eastern France. Hum. Immunol. 61: 303-308.

STORAGE

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

CHROMOSOMAL LOCATION

Genetic locus: HLA-DQA1/HLA-DQB1 (human) mapping to 6p21.32.

SOURCE

HLA-DQ (TAL 4.1) is a mouse monoclonal antibody raised against WT46 cell line of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HLA-DQ (TAL 4.1) is available conjugated to agarose (sc-53312 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53312 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53312 PE), fluorescein (sc-53312 FITC), Alexa Fluor® 488 (sc-53312 AF488), Alexa Fluor® 546 (sc-53312 AF546), Alexa Fluor® 594 (sc-53312 AF594) or Alexa Fluor® 647 (sc-53312 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53312 AF680) or Alexa Fluor® 790 (sc-53312 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

HLA-DQ (TAL 4.1) is recommended for detection of HLA-DQA1 and HLA-DQB1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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-DQ: 29 kDa.

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) 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-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

SELECT PRODUCT CITATIONS

1. Feldman, A., Gurevich, M., Huna-Baron, R. and Achiron, A. 2015. The role of B cells in the early onset of the first demyelinating event of acute optic neuritis. Invest. Ophthalmol. Vis. Sci. 56: 1349-1356.

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.