SANTA CRUZ BIOTECHNOLOGY, INC.

HLA-DR/DP/DQ/DX (CR3/43): sc-53302

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.

SOURCE

HLA-DR/DP/DQ/DX (CR3/43) is a mouse monoclonal antibody raised against tonsil cells of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HLA-DR/DP/DQ/DX (CR3/43) is available conjugated to agarose (sc-53302 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53302 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53302 PE), fluorescein (sc-53302 FITC), Alexa Fluor® 488 (sc-53302 AF488), Alexa Fluor® 546 (sc-53302 AF546), Alexa Fluor® 594 (sc-53302 AF594) or Alexa Fluor® 647 (sc-53302 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53302 AF680) or Alexa Fluor® 790 (sc-53302 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

HLA-DR/DP/DQ/DX (CR3/43) is recommended for detection of HLA-DR/DP/DQ/DX 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of HLA-DR/DP/DQ/DX: 30/29 kDa.

Positive Controls: Daudi cell lysate: sc-2415, NAMALWA cell lysate: sc-2234 or Raji whole cell lysate: sc-364236.

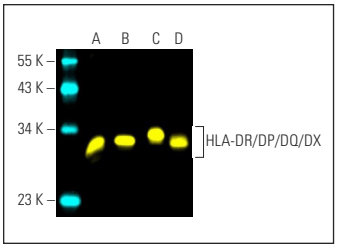
STORAGE

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

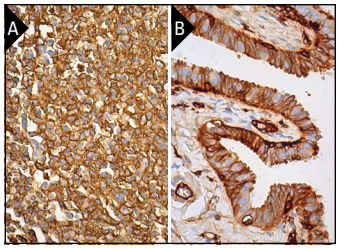
RESEARCH USE

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

DATA



HLA-DR/DP/DQ/DX (CR3/43) Alexa Fluor® 488: sc-53302 AF488. Direct fluorescent western blot analysis of HLA-DR/DP/DQ/DX expression in Raji (**A**), GA-10 (**B**), Daudi (**C**) and NAMALWA (**D**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 647: sc-516791.



HLA-DR/DP/DQ/DX (CR3/43): sc-53302. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node 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 fallopian tube tissue showing membrane and cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Cebrián, C., et al. 2014. MHC-I expression renders catecholaminergic neurons susceptible to T-cell-mediated degeneration. Nat. Commun. 5: 3633.
2. Sharma, S., et al. 2015. Differential proteomics approach to identify putative protective antigens of *Mycobacterium tuberculosis* presented during early stages of macrophage infection and their evaluation as DNA vaccines. Indian J. Exp. Biol. 53: 429-439.
3. Johnson, D.B., et al. 2016. Melanoma-specific MHC-II expression represents a tumour-autonomous phenotype and predicts response to anti-PD-1/PD-L1 therapy. Nat. Commun. 7: 10582.
4. Stewart, R.L., et al. 2019. A multigene assay determines risk of recurrence in patients with triple-negative breast cancer. Cancer Res. 79: 3466-3478.
5. Akiyama, M., et al. 2020. PD-L1 expression in malignant melanomas of the skin and gastrointestinal tract. Oncol. Lett. 19: 2481-2488.
6. Simsa, R., et al. 2021. Brain organoid formation on decellularized porcine brain ECM hydrogels. PLoS ONE 16: e0245685.
7. Cho, E.J., et al. 2021. Immuno-genomic classification of colorectal cancer organoids reveals cancer cells with intrinsic immunogenic properties associated with patient survival. J. Exp. Clin. Cancer Res. 40: 230.
8. Gonzalez-Ericsson, P.I., et al. 2021. Tumor-specific major histocompatibility-II expression predicts benefit to anti-PD-1/L1 therapy in patients with HER2-negative primary breast cancer. Clin. Cancer Res. 27: 5299-5306.
9. Kjeldsen, J.W., et al. 2021. A phase 1/2 trial of an immune-modulatory vaccine against IDO/PD-L1 in combination with nivolumab in metastatic melanoma. Nat. Med. 27: 2212-2223.

PROTOCOLS

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