SANTA CRUZ BIOTECHNOLOGY, INC.

HLA-A/B/C (LY5.1): sc-52810

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Major histocompatibility complex (MHC) molecules form an integral part of the immune response system. They are cell-surface receptors that bind peptides and present them to T lymphocytes. Human leukocyte antigens (HLAs) are polymorphic members of the MHC family that are specifically involved in the presentation of antigens to the T cell receptor. There are two classes of HLA antigens: class I (HLA-A, HLA-B and HLA-C) and class II (HLA-D). Class I molecules are expressed in nearly all cells and play a central role in the immune system by presenting peptides derived from the endoplasmic reticulum. The differential structural properties of MHC class I and class II molecules account for their respective roles in activating different populations of T lymphocytes. HLA-A, -B and -C encode membrane anchored heavy chains which heterodimerize with a light chain (β-2-Microglobulin) to form MHC-I. Polymorphisms yield hundreds of HLA-A, -B and -C alleles.

REFERENCES

1. Salomonsen, J., et al. 1987. The chicken erythrocyte-specific MHC antigen. Characterization and purification of the B-G antigen by monoclonal antibodies. Immunogenetics 25: 373-382.
2. Dunon, D., et al. 1990. Ontogenic appearance of MHC class I (B-F) antigens during chicken embryogenesis. Dev. Immunol. 1: 127-135.
3. Moller, L.B., et al. 1991. Variations in the cytoplasmic region account for the heterogeneity of the chicken MHC class I (B-F) molecules. Immunogenetics 34: 110-120.

CHROMOSOMAL LOCATION

Genetic locus: HLA-A (human) mapping to 6p22.1, HLA-B/HLA-C (human) mapping to 6p21.33.

SOURCE

HLA-A/B/C (LY5.1) is a mouse monoclonal antibody raised against purified HLA-A/B/C of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

HLA-A/B/C (LY5.1) is recommended for detection of HLA-A/B/C 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 immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of HLA-A/B/C: 46 kDa.

Positive Controls: HLA-B (h): 293T Lysate: sc-113341, Ramos cell lysate: sc-2216 or U-698-M whole cell lysate: sc-364799.

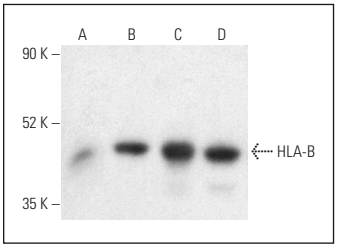
RESEARCH USE

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

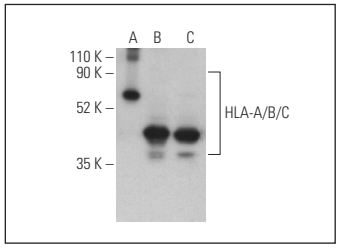
STORAGE

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

DATA



HLA-A/B/C (LY5.1): sc-52810. Western blot analysis of HLA-A/B/C expression in non-transfected 293T: sc-117752 (**A**), human HLA-B transfected 293T: sc-113341 (**B**), Ramos (**C**) and U-698-M (**D**) whole cell lysates. Detection reagent used: m-IgG_1 BP-HRP: sc-525408.



HLA-A/B/C (LY5.1): sc-52810. Western blot analysis of human recombinant HLA-A fusion protein (**A**) and HLA-A/B/C expression in Ramos (**B**) and U-698-M (**C**) whole cell lysates. Detection reagent used: m-IgG_1 BP-HRP: sc-525408.

SELECT PRODUCT CITATIONS

1. Landsverk, O.J., et al. 2011. Invariant chain increases the half-life of MHC II by delaying endosomal maturation. Immunol. Cell Biol. 89: 619-629.
2. Lu, P., et al. 2013. Generating hypoimmunogenic human embryonic stem cells by the disruption of β-2-Microglobulin. Stem Cell Rev. 9: 806-813.
3. Miranda, A., et al. 2015. Oncogenic transformation can orchestrate immune evasion and inflammation in human mesenchymal stem cells independently of extrinsic immune-selective pressure. Cancer Res. 75: 3032-3042.
4. Bettini, S., et al. 2018. Human mesenchymal stromal cell therapy for damaged cochlea repair in nod-scid mice deafened with kanamycin. Cytotherapy 20: 189-203.
5. Luo, N., et al. 2018. Melanoma response to anti-PD-L1 immunotherapy requires JAK1 signaling, but not JAK2. Oncoimmunology 7: e1438106.
6. Lehmann, B.D., et al. 2021. Multi-omics analysis identifies therapeutic vulnerabilities in triple-negative breast cancer subtypes. Nat. Commun. 12: 6276.
7. Bjornestad, S.A., et al. 2023. Atlantic cod *(Gadus morhua)* MHC I localizes to endolysosomal compartments independently of cytosolic sorting signals. Front. Cell Dev. Biol. 11: 1050323.
8. Abdelmohsen, K., et al. 2024. Identification of senescent cell subpopulations by CITE-seq analysis. Aging Cell. E-published.