SANTA CRUZ BIOTECHNOLOGY, INC.

MHC class I (BRA23/9): sc-66205

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Major histocompatibility complex (MHC) molecules, also designated human leukocyte antigen (HLA) molecules, are cell-surface receptors that bind foreign peptides and present them to T lymphocytes. MHC class I molecules consist of two polypeptide chains, an α or heavy chain, and β-2-Microglobulin, a non-covalently associated protein. Cytotoxic T lymphocytes bind antigenic peptides presented by MHC class I molecules. Antigens that bind to MHC class I molecules are typically 8-10 residues in length and are stabilized in a peptide binding groove. MHC class II molecules are encoded by polymorphic MHC genes and consist of a non-covalent complex of an α and β chain. Helper T lymphocytes bind antigenic peptides presented by MHC class II molecules. MHC class II molecules bind 13-18 amino acid antigenic peptides. Accumulating in endosomal/lysosomal compartments and on the surface of B cells, HLA-DM and -DO molecules regulate binding of exogenous peptides to class II molecules (HLA-DR) by sustaining a conformation that favors peptide exchange. The differential structural properties of MHC class I and class II molecules account for their respective roles in activating different populations of T lymphocytes.

REFERENCES

1. Murphy, D.B., et al. 1989. A novel MHC class II epitope expressed in thymic medulla but not cortex. Nature 338: 765-768.
2. AYu, R., et al. 1991. On the complexity of self. Nature 353: 660-662.
3. Agger, R., et al. 2000. Characterization of murine dendritic cells derived from adherent blood mononuclear cells *in vitro*. Scand. J. Immunol. 52: 138-147.

CHROMOSOMAL LOCATION

Genetic locus: HLA-B (human) mapping to 6p21.33.

SOURCE

MHC class I (BRA23/9) is a mouse monoclonal antibody raised against REH cell line of human origin.

PRODUCT

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

MHC class I (BRA23/9) is available conjugated to either phycoerythrin (sc-66205 PE) or fluorescein (sc-66205 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

MHC class I (BRA23/9) is recommended for detection of MHC class I 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 flow cytometry (1 µg per 1 x 10^6 cells).

Molecular Weight of MHC class I: 46 kDa.

Positive Controls: Raji whole cell lysate: sc-364236, HL-60 whole cell lysate: sc-2209 or Jurkat whole cell lysate: sc-2204.

STORAGE

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

SELECT PRODUCT CITATIONS

1. Castro-Sanchez, L., et al. 2010. Native type IV collagen induces cell migration through a CD9 and DDR1-dependent pathway in MDA-MB-231 breast cancer cells. Eur. J. Cell Biol. 89: 843-852.
2. Castro-Sanchez, L., et al. 2011. Role of DDR1 in the gelatinases secretion induced by native type IV collagen in MDA-MB-231 breast cancer cells. Clin. Exp. Metastasis 28: 463-477.
3. Villegas-Comonfort, S., et al. 2012. Arachidonic acid induces an increase of β-1,4-galactosyltransferase I expression in MDA-MB-231 breast cancer cells. J. Cell. Biochem. 113: 3330-3341.
4. Galindo-Hernandez, O., et al. 2013. Elevated concentration of microvesicles isolated from peripheral blood in breast cancer patients. Arch. Med. Res. 44: 208-214.
5. Li, T.F., et al. 2018. Dendritic cell-mediated delivery of doxorubicin-polyglycerol-nanodiamond composites elicits enhanced anti-cancer immune response in glioblastoma. Biomaterials 181: 35-52.
6. Li, T.F., et al. 2019. Doxorubicin-polyglycerol-nanodiamond composites stimulate glioblastoma cell immunogenicity through activation of autophagy. Acta Biomater. 86: 381-394.
7. Leal-Orta, E., et al. 2019. Role of PI3K/Akt on migration and invasion of MCF10A cells treated with extracellular vesicles from MDA-MB-231 cells stimulated with linoleic acid. J. Cell Commun. Signal. 13: 235-244.
8. Ramirez-Ricardo, J., et al. 2021. Role of Src/FAK in migration and invasion mediated by extracellular vesicles from MDA-MB-231 cells stimulated with linoleic acid. Med. Oncol. 38: 40.
9. Yu, T.T., et al. 2021. Macrophages mediated delivery of chlorin e6 and treatment of lung cancer by photodynamic reprogramming. Int. Immunopharmacol. 100: 108164.
10. Yu, T.T., et al. 2023. Chlorin e6-induced photodynamic effect facilitates immunogenic cell death of lung cancer as a result of oxidative endoplasmic reticulum stress and DNA damage. Int. Immunopharmacol. 115: 109661.
11. Han, N., et al. 2023. Dihydroartemisinin elicits immunogenic death through ferroptosis-triggered ER stress and DNA damage for lung cancer immunotherapy. Phytomedicine 112: 154682.

RESEARCH USE

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

CONJUGATES

See **MHC class I (W6/32): sc-32235** for MHC class I antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.