SANTA CRUZ BIOTECHNOLOGY, INC.

HLA-A (C-6): sc-365485

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 encodes a membrane anchored heavy chain which hetero-dimerizes with a light chain (β-2-Microglobulin) to form MHC-I. Polymorphisms yield hundreds of HLA-A alleles.

CHROMOSOMAL LOCATION

Genetic locus: HLA-A (human) mapping to 6p22.1.

SOURCE

HLA-A (C-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 61-93 within an internal region of HLA-A 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.

Blocking peptide available for competition studies, sc-365485 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

HLA-A (C-6) is recommended for detection of a broad range of HLA antigens 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of HLA-A: 45 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225, CCRF-HSB-2 cell lysate: sc-2265 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.

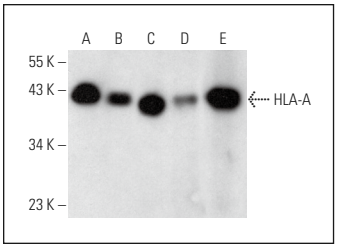
PROTOCOLS

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

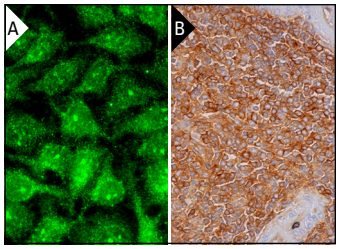
RESEARCH USE

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

DATA



HLA-A (C-6): sc-365485. Western blot analysis of HLA-A expression in CCRF-CEM (**A**), Jurkat (**B**), CCRF-HSB-2 (**C**) and human PBL (**D**) whole cell lysates and human spleen tissue extract (**E**).



HLA-A (C-6): sc-365485. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic and membrane staining of cells in white pulp and cells in red pulp (**B**).

SELECT PRODUCT CITATIONS

1. Angell, T.E., et al. 2014. MHC class I loss is a frequent mechanism of immune escape in papillary thyroid cancer that is reversed by interferon and selumetinib treatment *in vitro*. Clin. Cancer Res. 20: 6034-6044.
2. 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.
3. Luo, J., et al. 2020. Tissue-engineered vascular grafts with advanced mechanical strength from human iPSCs. Cell Stem Cell 26: 251-261.e8.
4. Lehmann, B.D., et al. 2021. Multi-omics analysis identifies therapeutic vulnerabilities in triple-negative breast cancer subtypes. Nat. Commun. 12: 6276.
5. Ware, C.A., et al. 2021. Amniotic fluid proteasome and immunoproteasome in the setting of intra-amniotic infection, inflammation, and preterm birth. Reprod. Sci. 28: 2562-2573.
6. Geng, N., et al. 2022. Identification of DDX60 as a regulator of MHC-I class molecules in colorectal cancer. Biomedicines 10: 3092.
7. Garcia-Recio, S., et al. 2023. Multiomics in primary and metastatic breast tumors from the AURORA US network finds microenvironment and epigenetic drivers of metastasis. Nat. Cancer 4: 128-147.
8. Heinemann, F.S. and Gershon, P.D. 2024. Differential abundance of DNA damage sensors and innate immune signaling proteins in inositol polyphosphate 4-phosphatase type II-negative triple-negative breast cancer classified by immunotype. Am. J. Pathol. 194: 2212-2232.

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.