SANTA CRUZ BIOTECHNOLOGY, INC.

CD8-α (C8/144B): sc-53212

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The T cell receptor (TCR) is a heterodimer composed of either α and β or γ and δ chains. CD3 chains and the CD4 or CD8 (CD8-α and CD8-β) co-receptors are also required for efficient signal transduction through the TCR. The TCR is expressed on T helper and T cytotoxic cells that can be distinguished by their expression of CD4 and CD8 proteins; T helper cells express CD4 proteins and T cytotoxic cells display CD8 proteins. CD8s are cell surface glycoproteins that exist as two chain complex (αα or αβ) receptors that bind class I MHC molecules presented by the antigen-presenting cell (APC). A primary function of CD8 proteins is to facilitate antigen recognition by the TCR and to strengthen the avidity of the TCR-antigen interactions. An additional role for CD8-expressing T cells may be to maintain low levels of HIV expression.

CHROMOSOMAL LOCATION

Genetic locus: CD8A (human) mapping to 2p11.2.

SOURCE

CD8-α (C8/144B) is a mouse monoclonal antibody raised against the C-terminus of CD8-α 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.

CD8-α (C8/144B) is available conjugated to agarose (sc-53212 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53212 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53212 PE), fluorescein (sc-53212 FITC), Alexa Fluor® 488 (sc-53212 AF488), Alexa Fluor® 546 (sc-53212 AF546), Alexa Fluor® 594 (sc-53212 AF594) or Alexa Fluor® 647 (sc-53212 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53212 AF680) or Alexa Fluor® 790 (sc-53212 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

CD8-α (C8/144B) is recommended for detection of CD8-α 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).

Suitable for use as control antibody for CD8-α siRNA (h): sc-29247, CD8-α shRNA Plasmid (h): sc-29247-SH and CD8-α shRNA (h) Lentiviral Particles: sc-29247-V.

Molecular Weight of CD8-α: 39 kDa.

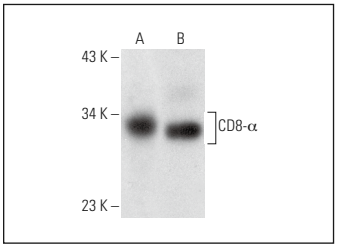
Molecular Weight of CD8-β: 32 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233, SUP-T1 whole cell lysate: sc-364796 or CCRF-CEM cell lysate: sc-2225.

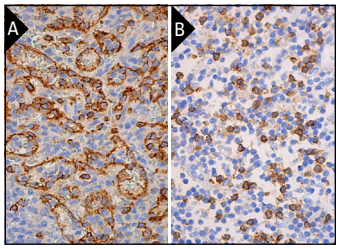
STORAGE

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

DATA



CD8-α (C8/144B): sc-53212. Western blot analysis of CD8-α expression in CCRF-CEM (**A**) and SUP-T1 (**B**) whole cell lysates.



CD8-α (C8/144B): sc-53212. Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing membrane and cytoplasmic staining of cells in red pulp and endothelial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing membrane and cytoplasmic staining of cells in non-germinal center (**B**).

SELECT PRODUCT CITATIONS

1. Clement, M., et al. 2011. Anti-CD8 antibodies can trigger $CD8^+$ T cell effector function in the absence of TCR engagement and improve peptide-MHCI tetramer staining. J. Immunol. 187: 654-663.
2. Zhang, J., et al. 2018. Cyclin D-Cdk4 kinase destabilizes PD-L1 via cullin 3-SPOP to control cancer immune surveillance. Nature 553: 91-95.
3. Genty, C., et al. 2019. Flex-Array®—a novel multi-well vessel system for the immobilization and multi-modal testing of intact formalin-fixed paraffin-embedded (FFPE) cells or tissues. J. Histotechnol. 42: 215-225.
4. Zhang, C., et al. 2020. Stat3 activation-induced fatty acid oxidation in $CD8^+$ T effector cells is critical for obesity-promoted breast tumor growth. Cell Metab. 31: 148-161.e5.
5. Bolognesi, M.M., et al. 2021. Antibodies validated for routinely processed tissues stain frozen sections unpredictably. Biotechniques 70: 137-148.
6. Jarosch, S., et al. 2022. ChipCytometry for multiplexed detection of protein and mRNA markers on human FFPE tissue samples. STAR Protoc. 3: 101374.
7. Hua, Y., et al. 2022. Cancer immunotherapies transition endothelial cells into HEVs that generate $TCF1^+$ T lymphocyte niches through a feed-forward loop. Cancer Cell 40: 1600-1618.e10.
8. Yang, L., et al. 2022. VPS9D1-AS1 overexpression amplifies intratumoral TGF-β signaling and promotes tumor cell escape from $CD8^+$ T cell killing in colorectal cancer. Elife 11: e79811.
9. Jarosch, S., et al. 2023. Multimodal immune cell phenotyping in GI biopsies reveals microbiome-related T cell modulations in human GvHD. Cell Rep. Med. 4: 101125.

RESEARCH USE

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