SANTA CRUZ BIOTECHNOLOGY, INC.

CTLA-4 (F-8): sc-376016

BACKGROUND

T cell proliferation and lymphokine production are triggered by occupation of the TCR by antigen, followed by a costimulatory signal that is delivered by a ligand expressed on antigen presenting cells. The B7-related cell surface proteins CD80 (B7-1) and CD86 (B7-2) are expressed on antigen presenting cells, bind the homologous T cell receptors CD28 and CTLA-4 (cytotoxic T lymphocyte-associated protein-4) and trigger costimulatory signals for optimal T cell activation. CTLA-4 shares 31% overall amino acid identity with CD28 and it has been proposed that CD28 and CTLA-4 are functionally redundant. SLAM is a novel receptor on T cells that, when engaged, potentiates T cell expansion in a CD28-independent manner. B7, also designated BB1, is another ligand or counterreceptor for CD28 and CTLA-4 that is expressed on the antigen-presenting cell.

REFERENCES

1. Freeman, G.J., et al. 1991. Structure, expression, and T cell costimulatory activity of the murine homologue of the human B lymphocyte activation antigen B7. J. Exp. Med. 174: 625-631.
2. Schwartz, R.H. 1992. Costimulation of T lymphocytes: the role of CD28, CTLA-4, and B7/BB1 in Interleukin-2 production and immunotherapy. Cell 71: 1065-1068.

CHROMOSOMAL LOCATION

Genetic locus: CTLA4 (human) mapping to 2q33.2; Ctla4 (mouse) mapping to 1 C2.

SOURCE

CTLA-4 (F-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 195-223 at the C-terminus of CTLA-4 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.

CTLA-4 (F-8) is available conjugated to agarose (sc-376016 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376016 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376016 PE), fluorescein (sc-376016 FITC), Alexa Fluor® 488 (sc-376016 AF488), Alexa Fluor® 546 (sc-376016 AF546), Alexa Fluor® 594 (sc-376016 AF594) or Alexa Fluor® 647 (sc-376016 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376016 AF680) or Alexa Fluor® 790 (sc-376016 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376016 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

CTLA-4 (F-8) is recommended for detection of CTLA-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

CTLA-4 (F-8) is also recommended for detection of CTLA-4 in additional species, including equine, canine, bovine and porcine.

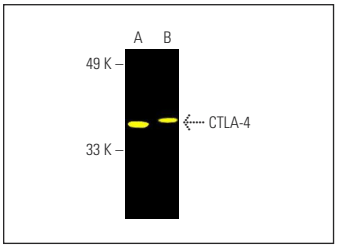
Suitable for use as control antibody for CTLA-4 siRNA (h): sc-42766, CTLA-4 siRNA (m): sc-42767, CTLA-4 shRNA Plasmid (h): sc-42766-SH, CTLA-4 shRNA Plasmid (m): sc-42767-SH, CTLA-4 shRNA (h) Lentiviral Particles: sc-42766-V and CTLA-4 shRNA (m) Lentiviral Particles: sc-42767-V.

Molecular Weight of CTLA-4 cytosolic and membrane form: 34/30 kDa.

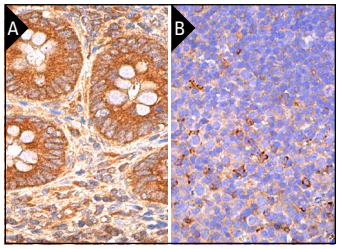
Molecular Weight of glycosylated CTLA-4: 41-43 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225 or ALL-SIL whole cell lysate: sc-364356.

DATA



CTLA-4 (F-8) Alexa Fluor® 488: sc-376016 AF488. Direct fluorescent western blot analysis of CTLA-4 expression in ALL-SIL (**A**) and CCRF-CEM (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



CTLA-4 (F-8): sc-376016. Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing cytoplasmic staining of glandular cells and lymphoid cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing membrane and cytoplasmic staining of subset of cells in germinal center and subset of cells in non-germinal center (**B**).

SELECT PRODUCT CITATIONS

1. Duchnowska, R., et al. 2016. Immune response in breast cancer brain metastases and their microenvironment: the role of the PD-1/PD-L axis. Breast Cancer Res. 18: 43.
2. Chang, H., et al. 2017. Overexpression of PD-L2 is associated with shorter relapse-free survival in patients with malignant salivary gland tumors. Onco Targets Ther. 10: 2983-2992.
3. Anczurowski, M., et al. 2018. Mechanisms underlying the lack of endogenous processing and CLIP-mediated binding of the invariant chain by HLA-DP^{84Gly}. Sci. Rep. 8: 4804.

RESEARCH USE

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