SANTA CRUZ BIOTECHNOLOGY, INC.

CTLA-4 (Q-20): sc-1630

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.
3. Peach, R.J., et al. 1995. Both extracellular immunoglobin-like domains of CD80 contain residues critical for binding T cell surface receptors CTLA-4 and CD28. J. Biol. Chem. 270: 21181-21187.
4. Fargeas, C.A., et al. 1995. Identification of residues in the V domain of CD80 (B7-1) implicated in functional interactions with CD28 and CTLA-4. J. Exp. Med. 182: 667-675.
5. Gribben, J.G., et al. 1995. CTLA-4 mediates antigen-specific apoptosis of human T cells. Proc. Natl. Acad. Sci. USA 92: 811-815.
6. Cocks, B.G., et al. 1995. A novel receptor involved in T cell activation. Nature 376: 260-263.

CHROMOSOMAL LOCATION

Genetic locus: Ctla4 (mouse) mapping to 1 C2.

SOURCE

CTLA-4 (Q-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of CTLA-4 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1630 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as fluorescein conjugate for immunofluorescence, sc-1630 FITC, 200 µg/1 ml.

APPLICATIONS

CTLA-4 (Q-20) is recommended for detection of CTLA-4 of mouse and rat 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

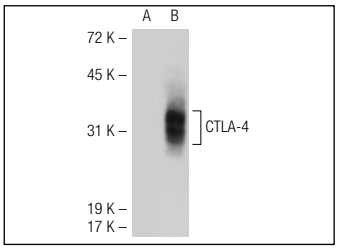
Suitable for use as control antibody for CTLA-4 siRNA (m): sc-42767, CTLA-4 shRNA Plasmid (m): sc-42767-SH and CTLA-4 shRNA (m) Lentiviral Particles: sc-42767-V.

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

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

Positive Controls: CTLA-4 (m): 293T Lysate: sc-119504.

DATA



CTLA-4 (Q-20): sc-1630. Western blot analysis of CTLA-4 expression in non-transfected: sc-117752 (**A**) and mouse CTLA-4 transfected: sc-119504 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Zhang, Y., et al. 1997. Interaction of CTLA-4 with AP50, a clathrin coated pit adaptor protein. Proc. Natl. Acad. Sci. USA 94: 9273-9278.
2. Lee, K.M., et al. 1998. Molecular basis of T cell inactivation by CTLA-4. Science 182: 2263-2266.
3. Masteller, E.L., et al. 2000. Structural analysis of CTLA-4 function *in vivo*. J. Immunol. 164: 5319-5327.
4. Izawa, A., et al. 2006. Cre/loxP-mediated CTLA-4 IgG gene transfer induces clinically relevant immunosuppression via on-off gene recombination *in vivo*. Cardiovasc. Res. 69: 289-297.

STORAGE

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

RESEARCH USE

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