SANTA CRUZ BIOTECHNOLOGY, INC.

CD28 (2Q1293): sc-70611

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. Chambers, C.A., et al. 1997. Lymphoproliferation in CTLA-4-deficient mice is mediated by costimulation-dependent activation of $CD4^+$ T cells. Immunity 7: 885-895.
2. Deshpande, M., et al. 2002. A novel CD28 mRNA variant and simultaneous presence of various CD28 mRNA isoforms in human T lymphocytes. Hum. Immunol. 63: 20-23.
3. Krummel, M.F. and Allison, J.P. 2011. Pillars article: CD28 and CTLA-4 have opposing effects on the response of T cells to stimulation. The journal of experimental medicine. 1995. 182: 459-465. J. Immunol. 187: 3459-3465.
4. Körmendy, D., et al. 2013. Impact of the CTLA-4/CD28 axis on the processes of joint inflammation in rheumatoid arthritis. Arthritis Rheum. 65: 81-87.
5. Yu, X., et al. 2013. Artificial antigen-presenting cells plus IL-15 and IL-21 efficiently induce melanoma-specific cytotoxic $CD8^+$ $CD28^+$ T lymphocyte responses. Asian Pac. J. Trop. Med. 6: 467-472.
6. Ewing, M.M., et al. 2013. T-cell co-stimulation by CD28-CD80/86 and its negative regulator CTLA-4 strongly influence accelerated atherosclerosis development. Int. J. Cardiol. 168: 1965-1974.
7. Chen, L. and Flies, D.B. 2013. Molecular mechanisms of T cell co-stimulation and co-inhibition. Nat. Rev. Immunol. 13: 227-242.

CHROMOSOMAL LOCATION

Genetic locus: CD28 (human) mapping to 2q33.2.

SOURCE

CD28 (2Q1293) is a rat monoclonal antibody raised against peripheral blood T-cells of human origin.

PRODUCT

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

STORAGE

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

APPLICATIONS

CD28 (2Q1293) is recommended for detection of CD28 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).

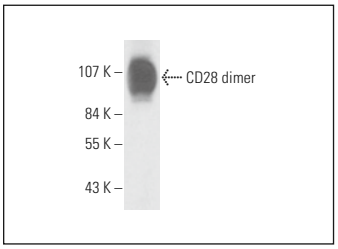
Suitable for use as control antibody for CD28 siRNA (h): sc-29983, CD28 shRNA Plasmid (h): sc-29983-SH and CD28 shRNA (h) Lentiviral Particles: sc-29983-V.

Molecular Weight of CD28 monomer: 44 kDa.

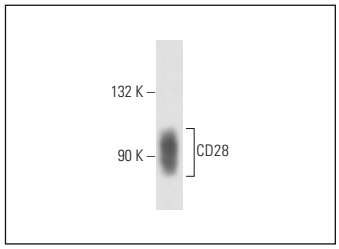
Molecular Weight of CD28 homodimer: 90 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

DATA



CD28 (2Q1293): sc-70611. Western blot analysis of CD28 expression in Jurkat whole cell lysate.



CD28 (2Q1293): sc-70611. Western blot analysis of CD28 expression in Jurkat whole cell lysate under non-reducing conditions.

RESEARCH USE

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

PROTOCOLS

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