SANTA CRUZ BIOTECHNO

CD28 (CD28.1): sc-19654

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

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- 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.
- 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.
- 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.
- 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.
- 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 (CD28.1) is a mouse monoclonal antibody raised against human CD28 Ig fusion protein and HPB-MLT human tumor cells.

PRODUCT

Each vial contains 200 μg lgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD28 (CD28.1) is available conjugated to either phycoerythrin (sc-19654 PE) or fluorescein (sc-19654 FITC), 200 µg/ml, for IF, IHC(P) and FCM.

APPLICATIONS

CD28 (CD28.1) 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 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 μ g per 1 x 10⁶ 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.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz MarkerTM Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.







CD28 (CD28.1): sc-19654. Western blot analysis of CD28 expression in Jurkat whole cell lysate.

CD28 (CD28.1) PE: sc-19654 PE. FCM analysis of CCRF-CEM cells. Black line histogram represents the isotype control, normal mouse IgG₁-PE: sc-2866.

SELECT PRODUCT CITATIONS

 Tang, B., et al. 2014. Activation of glioma cells generates immune tolerant NKT cells. J. Biol. Chem. 289: 34595-34600.

STORAGE

Store at 4° C, **D0 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.