

CD28 (N-20): sc-1625

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. SLAMF 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

- Freeman, G.J., et al. 1991. Structure, expression, and T cell costimulatory activity of the murine homolog of the human B lymphocyte activation antigen B7. *J. Exp. Med.* 174: 625-631.
- 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.
- Peach, R.J., et al. 1995. Both extracellular immunoglobulin-like domains of CD80 contain residues critical for binding T cell surface receptors CTLA-4 and CD28. *J. Biol. Chem.* 270: 21181-21187.
- Fargeas, C.A., et al. 1995. Identification of residues in the V domain of CD80 (B7-1) implicated in functional interactions with CD28 and CTLA4. *J. Exp. Med.* 182: 667-675.

CHROMOSOMAL LOCATION

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

SOURCE

CD28 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of CD28 of human 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-1625 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as fluorescein conjugate for flow cytometry, sc-1625 FITC, 100 tests.

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.

APPLICATIONS

CD28 (N-20) 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CD28 (N-20) is also recommended for detection of CD28 in additional species, including equine and bovine.

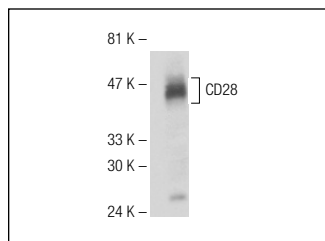
Suitable for use as control antibody for CD28 siRNA (h): sc-29983, CD28 shRNA Plasmid (h): sc-29983-SH and CD28 shRNA (h) Lentiviral Particles: sc-29983-V.

Molecular Weight of CD28 monomer: 44 kDa.

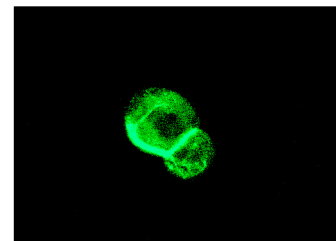
Molecular Weight of CD28 homodimer: 90 kDa.

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

DATA



CD28 (N-20): sc-1625. Western blot analysis of CD28 expression in Jurkat whole cell lysate.



CD28 (N-20): sc-1625. Immunofluorescence staining of methanol-fixed Jurkat cells showing membrane staining.

SELECT PRODUCT CITATIONS

- Sadra, A., et al. 1999. Identification of tyrosine phosphorylation sites in the CD28 cytoplasmic domain and their role in the costimulation of Jurkat T cells. *J. Immunol.* 162: 1966-1973.
- Sadra, A., et al. 2004. Translocation of CD28 to lipid rafts and costimulation of IL-2. *Proc. Natl. Acad. Sci. USA* 101: 11422-11427.
- Tavano, R., et al. 2006. CD28 interaction with filamin-A controls lipid raft accumulation at the T-cell immunological synapse. *Nat. Cell Biol.* 8: 1270-1276.
- Holmes, K., et al. 2010. VEGF stimulates RCAN1.4 expression in endothelial cells via a pathway requiring Ca²⁺/calcineurin and protein kinase C-δ. *PLoS ONE* 5: e11435.

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Try **CD28 (CD28.2): sc-19655** or **CD28 (2Q1293): sc-70611**, our highly recommended monoclonal alternatives to CD28 (N-20).