

CD28 (PV-1): sc-52472

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.* 195: 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 (mouse) mapping to 1 C2.

SOURCE

CD28 (PV-1) is a Armenian hamster monoclonal antibody raised against EL-4 cells 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.

CD28 (PV-1) is available conjugated to either phycoerythrin (sc-52472 PE) or fluorescein (sc-52472 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

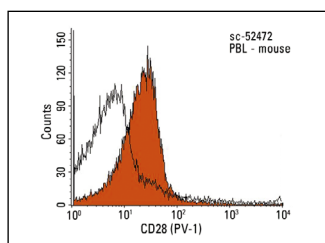
CD28 (PV-1) is recommended for detection of CD28 of mouse origin by immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and flow cytometry (1 µg per 1 x 10⁶ cells).

Suitable for use as control antibody for CD28 siRNA (m): sc-29982, CD28 shRNA Plasmid (m): sc-29982-SH and CD28 shRNA (m) Lentiviral Particles: sc-29982-V.

Molecular Weight of CD28 monomer: 44 kDa.

Molecular Weight of CD28 homodimer: 90 kDa.

DATA



CD28 (PV-1): sc-52472. Indirect FCM analysis of mouse peripheral blood leukocytes stained with CD28 (PV-1), followed by PE-conjugated mouse anti-Armenian hamster IgG: sc-3944. Black line histogram represents the isotype control, normal Armenian hamster IgG: sc-3886.

SELECT PRODUCT CITATIONS

1. Strazza, M., et al. 2015. CD28 inhibits T cell adhesion by recruiting CAPRI to the plasma membrane. *J. Immunol.* 194: 2871-2877.

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.

PROTOCOLS

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