SANTA CRUZ BIOTECHNOLOGY, INC.

CD28 (JJ319): sc-19599

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), expressed on antigen presenting cells, bind the homologous T cell receptors CD28 and CTLA-4 (cytotoxic T lymphocyte-associated protein-4). The dominant co-stimulatory receptor CD28 is expressed on resting T-cells, while CTLA-4 is expressed as a co-inhibitory receptor on activated T-cells, and binds CD80 and CD86 with higher affinity then CD28. 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., Sullivan, T.J. and Allison, J.P. 1997. Lymphoproliferation in CTLA-4-deficient mice is mediated by costimulation-dependent activation of $CD4^+$ T cells. Immunity 7: 885-895.
2. Deshpande, M., Venuprasad, K., Parab, P.B., Saha, B. and Mitra, D. 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. J. Immunol. 187: 3459-3465.
4. Kormendy, D., Hoff, H., Hoff, P., Broker, B.M., Burmester, G.R. and Brunner-Weinzierl, M.C. 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., He, J., Mongkhoune, S., Peng, Y., Xie, Y., Su, J., Zhou, S.F., Xie, X.X., Luo, G.R., Fang, Y., Li, X., Li, X., Zhou, N., Zhao, Y.X. and Lu, X.L. 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. Chen, L. and Flies, D.B. 2013. Molecular mechanisms of T cell co-stimulation and co-inhibition. Nat. Rev. Immunol. 13: 227-242.
7. Yamaguchi, T., Kishi, A., Osaki, M., Morikawa, H., Prieto-Martin, P., Wing, K., Saito, T. and Sakaguchi, S. 2013. Construction of self-recognizing regula-tory T cells from conventional T cells by controlling CTLA-4 and IL-2 expression. Proc. Natl. Acad. Sci. USA 110: E2116-E2125.
8. Ewing, M.M., Karper, J.C., Abdul, S., de Jong, R.C., Peters, H.A., de Vries, M.R., Redeker, A., Kuiper, J., Toes, R.E., Arens, R., Jukema, J.W. and Quax, P.H. 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.

STORAGE

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

CHROMOSOMAL LOCATION

Genetic locus: Cd28 (mouse) mapping to 1 C2.

SOURCE

CD28 (JJ319) is a mouse monoclonal antibody raised against rat CD28 transfected mouse A20JB lymphoma cell line.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD28 (JJ319) is available conjugated to either phycoerythrin (sc-19599 PE) or fluorescein (sc-19599 FITC), 200 µg/ml, for IF, IHC(P) and FCM.

APPLICATIONS

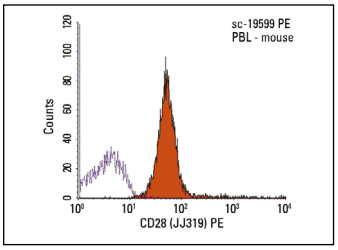
CD28 (JJ319) is recommended for detection of CD28 of mouse and rat origin by flow cytometry (1 µg per 1 x 10^6 cells).

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 (JJ319) PE: sc-19599 PE. FCM analysis of mouse peripheral blood leukocytes. Black line histogram represents the isotype control, normal mouse IgG_1-PE: sc-2866.

SELECT PRODUCT CITATIONS

1. He, C., Song, C.H., Cheng, L., Chen, T., Liu, C., Liu, Z. and Yang, P.C. 2013. Measles virus-derived peptide/food antigen adducts facilitate the establishment of antigen specific oral tolerance. J. Physiol. Pharmacol. 64: 95-102.

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.