

CD28 (19-111): sc-4298 WB

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. Freeman, G.J., Gray, G.S., Gimmi, C.D., Lombard, D.B., Zhou, L.J., White, M., Fingerhuth, J.D., Gribben, J.G. and Nadler, L.M. 1991. Structure, expression, and T cell costimulatory activity of the murine homologue of the human B lymphocyte activation antigen B7. *J. Exp. Med.* 174: 625-631.
2. 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.
3. Peach, R.J., Bajorath, J., Naemura, J., Leytze, G., Greene, J., Aruffo, A. and Linsley, P.S. 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.
4. Fargeas, C.A., Truneh, A., Reddy, M., Hurle, M., Sweet, R. and Sekaly, R.P. 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.
5. Gribben, J.G., Freeman, G.J., Boussiotis, V.A., Rennert, P., Jellis, C.L., Greenfield, E., Barber, M., Restivo, V.A. Jr., Ke, X., Gray, G.S. and Nadler, L.M. 1995. CTLA4 mediates antigen-specific apoptosis of human T cells. *Proc. Natl. Acad. Sci. USA* 92: 811-815.
6. Cocks, B.G., Chang, C.-C.J., Carballido, J.M., Yssel, H., de Vries, J.E. and Aversa, G. 1995. A novel receptor involved in T-cell activation. *Nature* 376: 260-263.
7. Harlan, D.M., Abe, R., Lee, K.P. and June, C.H. 1995. Potential roles of the B7 and CD28 receptor families in autoimmunity and immune evasion. *Clin. Immunol. Immunopath.* 75: 99-111.

SOURCE

CD28 (19-111) is expressed in *E. coli* as a 37 kDa tagged fusion protein corresponding to amino acids 19-111 of CD28 of human origin.

PRODUCT

CD28 (19-111) is purified from bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 10 µg in 0.1 ml SDS-PAGE loading buffer.

APPLICATIONS

CD28 (19-111) is suitable as a Western blotting control for sc-9093.

STORAGE

Store at -20° C; stable for one year from the date of shipment.

RESEARCH USE

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