

CD40 (h): 293T Lysate: sc-174952

BACKGROUND

Resting B cells can be activated and clonally expanded into antibody-producing cells in response to a combination of cell contact and soluble signals provided by primed helper T (Th) cells. While cytokines IL-4 and IL-13 alone are inadequate for B cell activation, contact with Th cells seems to be sufficient for delivery of proliferative signals. A receptor ligand pair central to the transmission of this signal is CD40, expressed on the surface of B cells, together with CD40L, expressed on activated T cells. In the presence of such stimulus, IL-4 and IL-13 are capable of triggering immunoglobulin class switching and secretion of IgE. B cells are sensitive to these cytokines only subsequent to CD40/CD40L-driven DNA synthesis. A downstream mediator of the CD40 signaling pathway, designated CRAF, is a member of an expanding family of proteins that contain a conserved cysteine- and histidine-rich RING finger motif. Other members of the family include TRAF1 and TRAF2. The latter proteins have been shown to regulate TNF-R2 as well as CD40 signaling through activation of the NF κ B family of transcription factors.

REFERENCES

1. Kehry, M.R. and Hodgkin, P.D. 1994. B cell activation by helper T cell membranes. *Crit. Rev. Immunol.* 14: 221-238.
2. Hu, H.M., O'Rourke, K., Boguski, M.S. and Dixit, V.M. 1994. A novel RING finger protein interacts with the cytoplasmic domain of CD40. *J. Biol. Chem.* 269: 30069-30072.
3. Rothe, M., Wong, S.C., Henzel, W.J. and Goeddel, D.V. 1994. A novel family of putative signal transducers associated with the cytoplasmic domain of the 75 kDa tumor necrosis factor receptor. *Cell* 78: 681-682.
4. Gordon, J. 1995. CD40 and its ligand: central players in B lymphocyte survival, growth and differentiation. *Blood Rev.* 9: 53-56.
5. Fuleihan, R., Ahern, D. and Geha, R.S. 1995. Expression of the CD40 ligand in T lymphocytes and induction of IgE isotype switching. *Int. Arch. Allergy Immunol.* 107: 43-44.
6. Cheng, G., Cleary, A.M., Ye, Z.S., Hong, D.I., Lederman, S. and Baltimore, D. 1995. Involvement of CRAF1, a relative of TRAF, in CD40 signaling. *Science* 267: 1494-1498.
7. Rothe, M., Sarma, V., Dixit, V.M. and Goeddel, D.V. 1995. TRAF2-mediated activation of NF κ B by TNF receptor 2 and CD40. *Science* 269: 1424-1427.
8. Grandien, A., Brás, A. and Martinez, C. 1996. Acquisition of CD40 expression during murine B-cell differentiation. *Scand. J. Immunol.* 43: 47-55.

CHROMOSOMAL LOCATION

Genetic locus: CD40 (human) mapping to 20q13.12.

PRODUCT

CD40 (h): 293T Lysate represents a lysate of human CD40 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

CD40 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive CD40 antibodies. Recommended use: 10-20 μ l per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

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.