

CD40 (G-14): sc-30683

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

- Kehry, M.R. and Hodgkin, P.D. 1994. B cell activation by helper T cell membranes. *Crit. Rev. Immunol.* 14: 221-238.
- 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.
- 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.
- Gordon, J. 1995. CD40 and its ligand: central players in B lymphocyte survival, growth and differentiation. *Blood Rev.* 9: 53-56.
- Fuleihan, R., Ahern, D. and Geha, R.S. 1995. Expression of the CD40 ligand in T lymphocytes and induction of IgE isotype switching. *Intl. Arch. Allergy Immunol.* 107: 43-44.
- 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.
- 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.
- Grandien, A., Bras, 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; Cd40 (mouse) mapping to 2 H3.

SOURCE

CD40 (G-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of CD40 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-30683 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CD40 (G-14) is recommended for detection of precursor and mature CD40 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Suitable for use as control antibody for CD40 siRNA (h): sc-29250, CD40 siRNA (m): sc-29998, CD40 shRNA Plasmid (h): sc-29250-SH, CD40 shRNA Plasmid (m): sc-29998-SH, CD40 shRNA (h) Lentiviral Particles: sc-29250-V and CD40 shRNA (m) Lentiviral Particles: sc-29998-V.

Molecular Weight of CD40: 43 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, A-431 whole cell lysate: sc-2201 or NAMALWA cell lysate: sc-2234.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.



Try **CD40 (H-10): sc-13128** or **CD40 (HM40-3): sc-20010**, our highly recommended monoclonal alternatives to CD40 (G-14). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **CD40 (H-10): sc-13128**.