

# CD40 (C-20): sc-975

## 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 $\kappa$ B family of transcription factors.

## CHROMOSOMAL LOCATION

Genetic locus: CD40 (human) mapping to 20q13.12; Cd40 (mouse) mapping to 2 H3.

## SOURCE

CD40 (C-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of CD40 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD40 (C-20) is available conjugated to agarose (sc-975 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP.

Blocking peptide available for competition studies, sc-975 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

CD40 (C-20) is recommended for detection of CD40 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CD40 (C-20) is also recommended for detection of CD40 in additional species, including equine, canine, bovine and porcine.

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.

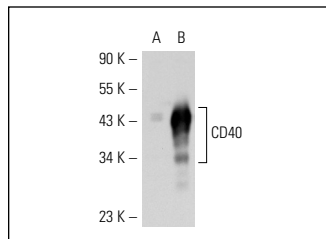
Molecular Weight of CD40: 43 kDa.

Positive Controls: CD40 (h): 293 Lysate: sc-112948.

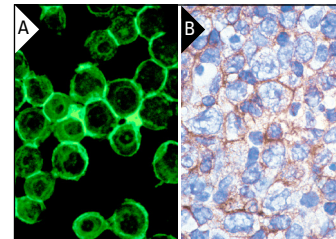
## STORAGE

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

## DATA



CD40 (C-20): sc-975. Western blot analysis of CD40 expression in non-transfected: sc-110760 (A) and human CD40 transfected: sc-112948 (B) 293 whole cell lysates.



CD40 (C-20): sc-975. Immunofluorescence staining of methanol-fixed BJAB cells showing membrane localization (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lymphoma showing membrane staining (B).

## SELECT PRODUCT CITATIONS

1. Miller, W.E., et al. 1998. Interaction of tumor necrosis factor receptor-associated factor signaling proteins with the latent membrane protein 1 PXQXT motif is essential for induction of epidermal growth factor receptor expression. *Mol. Cell. Biol.* 18: 2835-2844.
2. Vaitaitis, G.M., et al. 2010. CD40 glycoforms and TNF-receptors 1 and 2 in the formation of CD40 receptor(s) in autoimmunity. *Mol. Immunol.* 47: 2303-2313.
3. Shoji, Y., et al. 2011. The CD40-CD154 interaction would correlate with proliferation and immune escape in pancreatic ductal adenocarcinoma. *J. Surg. Oncol.* 103: 230-238.
4. Knox, P.G., et al. 2011. The death domain kinase RIP1 links the immunoregulatory CD40 receptor to apoptotic signaling in carcinomas. *J. Cell Biol.* 192: 391-399.
5. Mavroudi, I., et al. 2011. The CD40/CD40 ligand interactions exert pleiotropic effects on bone marrow granulopoiesis. *J. Leukoc. Biol.* 89: 771-783.
6. Tin, A.S., et al. 2014. Essential role of the cancer stem/progenitor cell marker nucleostemin for indole-3-carbinol anti-proliferative responsiveness in human breast cancer cells. *BMC Biol.* 12: 72.

## RESEARCH USE

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



Try **CD40 (H-10): sc-13128** or **CD40 (HM40-3): sc-20010**, our highly recommended monoclonal alternatives to CD40 (C-20). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **CD40 (H-10): sc-13128**.