

CD40 (H-10): sc-13128



The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

CD40 (H-10) is a mouse monoclonal antibody raised against amino acids 74-193 of CD40 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD40 (H-10) is available conjugated to agarose (sc-13128 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13128 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13128 PE), fluorescein (sc-13128 FITC), Alexa Fluor[®] 488 (sc-13128 AF488), Alexa Fluor[®] 546 (sc-13128 AF546), Alexa Fluor[®] 594 (sc-13128 AF594) or Alexa Fluor[®] 647 (sc-13128 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-13128 AF680) or Alexa Fluor[®] 790 (sc-13128 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CD40 (H-10) is recommended for detection of CD40 of human origin by Western Blotting (starting dilution 1:1,000, dilution range 1:1,000-1:5,000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 shRNA Plasmid (h): sc-29250-SH and CD40 shRNA (h) Lentiviral Particles: sc-29250-V.

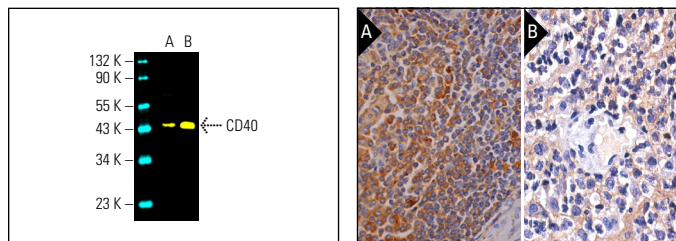
Molecular Weight of CD40: 43 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, BJAB whole cell lysate: sc-2207 or Raji whole cell lysate: sc-364236.

STORAGE

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

DATA



CD40 (H-10) Alexa Fluor[®] 488: sc-13128 AF488. Direct fluorescent western blot analysis of CD40 expression in Raji (A) and BJAB (B) whole cell lysates. Blocked with UltraCruz[®] Blocking Reagent: sc-516214. Cruz Marker[™] Molecular Weight Standards detected with Cruz Marker[™] MW Tag-Alexa Fluor[®] 647: sc-516791.

CD40 (H-10): sc-13128. Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic staining of cells in white pulp and cells in red pulp (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymphoma showing membrane staining (B).

SELECT PRODUCT CITATIONS

- Contin, C., et al. 2003. Membrane-anchored CD40 is processed by the tumor necrosis factor- α -converting enzyme. Implications for CD40 signaling. *J. Biol. Chem.* 278: 32801-32809.
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- Godoy, L.C., et al. 2010. Loss of CD40 endogenous S-nitrosylation during inflammatory response in endotoxemic mice and patients with sepsis. *Shock* 33: 626-633.
- McNally, A.K., et al. 2011. Foreign body-type multinucleated giant cells induced by interleukin-4 express select lymphocyte co-stimulatory molecules and are phenotypically distinct from osteoclasts and dendritic cells. *Exp. Mol. Pathol.* 91: 673-681.
- Li, G., et al. 2013. Human genetics in rheumatoid arthritis guides a high-throughput drug screen of the CD40 signaling pathway. *PLoS Genet.* 9: e1003487.
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- Jiang, C., et al. 2019. CRISPR/Cas9 screens reveal multiple layers of B cell CD40 regulation. *Cell Rep.* 28: 1307-1322.
- Dewitte, A., et al. 2020. CD154 induces interleukin-6 secretion by kidney tubular epithelial cells under hypoxic conditions: inhibition by chloroquine. *Mediators Inflamm.* 2020: 6357046.

RESEARCH USE

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

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