SANTA CRUZ BIOTECHNOLOGY, INC.

# CD40 (H-10): sc-13128

SANTA CRUZ BIOTECHNOLOGY

*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 NFκB 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 µg $IgG_{2b}$ 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 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13128 HRP), 200 µg/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 µg/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 µg/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 µg per 100-500 µg 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.

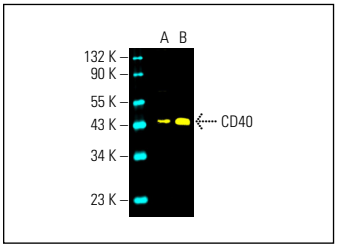
Molecular Weight of CD40: 43 kDa.

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

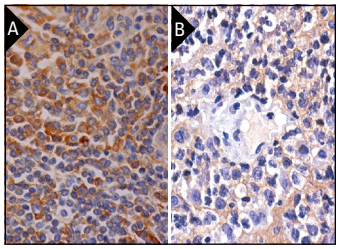
## STORAGE

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


1. 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.
2. 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.
3. 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.
4. 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.
5. Bello, L., et al. 2016. Association study of exon variants in the NFκB and TGFβ pathways identifies CD40 as a modifier of duchenne muscular dystrophy. Am. J. Hum. Genet. 99: 1163-1171.
6. Jiang, C., et al. 2019. CRISPR/Cas9 screens reveal multiple layers of B cell CD40 regulation. Cell Rep. 28: 1307-1322.e8.
7. He, C., et al. 2020. Epithelial cell derived microvesicles: a safe delivery platform of CRISPR/Cas9 conferring synergistic anti-tumor effect with sorafenib. Exp. Cell Res. 392: 112040.
8. Jaffar Ali, D., et al. 2021. Microvesicles mediate sorafenib resistance in liver cancer cells through attenuating p53 and enhancing FOXM1 expression. Life Sci. 271: 119149.


## RESEARCH USE

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