

# CD40 (LOB-11): sc-13528

## 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.

## SOURCE

CD40 (LOB-11) is a mouse monoclonal antibody raised against extracellular domain of CD40 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD40 (LOB-11) is available conjugated to agarose (sc-13528 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13528 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13528 PE), fluorescein (sc-13528 FITC), Alexa Fluor<sup>®</sup> 488 (sc-13528 AF488), Alexa Fluor<sup>®</sup> 546 (sc-13528 AF546), Alexa Fluor<sup>®</sup> 594 (sc-13528 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-13528 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-13528 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-13528 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

CD40 (LOB-11) is recommended for detection of CD40 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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 flow cytometry (1  $\mu$ g per 1 x 10<sup>6</sup> cells).

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.

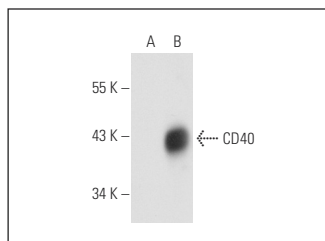
Molecular Weight of CD40: 43 kDa.

Positive Controls: CD40 (h): 293 Lysate: sc-112948, BJAB whole cell lysate: sc-2207 or A-431 whole cell lysate: sc-2201.

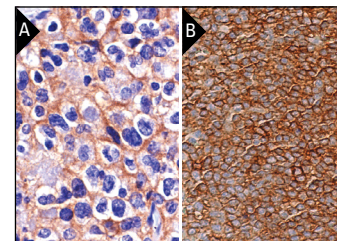
## STORAGE

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

## DATA



CD40 (LOB-11): sc-13528. Western blot analysis of CD40 expression in non-transfected: sc-110760 (A) and human CD40 transfected: sc-112948 (B) 293 whole cell lysates.



CD40 (LOB-11): sc-13528. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lymphoma showing membrane staining (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic and membrane staining of cells in white pulp (B).

## SELECT PRODUCT CITATIONS

- D'Aversa, T.G., et al. 2002. CD40-CD40L interactions induce chemokine expression by human microglia: implications for human immunodeficiency virus encephalitis and multiple sclerosis. *Am. J. Pathol.* 160: 559-567.
- Morrison, M.D., et al. 2005. An atypical tumor necrosis factor (TNF) receptor-associated factor-binding motif of B cell-activating factor belonging to the TNF family (BAFF) receptor mediates induction of the noncanonical NF $\kappa$ B signaling pathway. *J. Biol. Chem.* 280: 10018-10024.
- Sommer, S., et al. 2009. *Mycobacterium avium* subspecies paratuberculosis suppresses expression of IL-12 p40 and iNOS genes induced by signalling through CD40 in bovine monocyte-derived macrophages. *Vet. Immunol. Immunopathol.* 128: 44-52.
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- Celià-Terrassa, T., et al. 2012. Epithelial-mesenchymal transition can suppress major attributes of human epithelial tumor-initiating cells. *J. Clin. Invest.* 122: 1849-1868.
- Andoh, Y., et al. 2013. Dendritic cells fused with different pancreatic carcinoma cells induce different T-cell responses. *Onco Targets Ther.* 6: 29-40.
- Dimitrakopoulos, F.D., et al. 2019. Expression of immune system-related membrane receptors CD40, RANK, BAFFR and LT $\beta$ R is associated with clinical outcome of operated non-small-cell lung cancer patients. *J. Clin. Med.* 8 pii: E741.

## RESEARCH USE

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

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