

CD154 (K-19): sc-1594

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. CD40 and CD154 (also designated CD40L) comprise a receptor ligand pair central to the transmission of this signal. CD40 is expressed on the surface of B cells and CD154 is 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. CD154 is a 261 amino acid protein that is expressed as a soluble cytokine as well as a homotrimeric type II transmembrane protein. Expression of CD154 is tightly regulated, and abnormal levels of CD154 are associated with the pathogenesis of atherosclerotic plaque destabilization and thrombotic events. Mutations in the gene encoding for CD154 are implicated in hyper-IgM immunodeficiency syndrome type 1.

REFERENCES

1. Kehry, M.R. and Hodgkin, P.D. 1994. B cell activation by helper T cell membranes. *Crit. Rev. Immunol.* 14: 221-238.
2. Hu, H.M., et al. 1994. A novel RING finger protein interacts with the cytoplasmic domain of CD40. *J. Biol. Chem.* 269: 30069-30072.
3. Rothe, M., et al. 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.
4. Gordon, J. 1995. CD40 and its ligand: central players in B lymphocyte survival, growth, and differentiation. *Blood Rev.* 9: 53-56.

CHROMOSOMAL LOCATION

Genetic locus: CD40LG (human) mapping to Xq26.3; Cd40lg (mouse) mapping to X A5.

SOURCE

CD154 (K-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of CD154 of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-1594 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as fluorescein conjugate for flow cytometry, sc-1594 FITC, 100 tests.

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.

APPLICATIONS

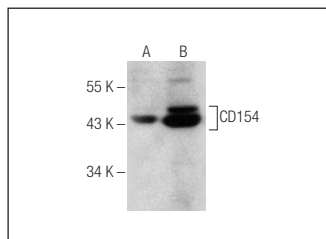
CD154 (K-19) is recommended for detection of CD154 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CD154 siRNA (h): sc-29965, CD154 siRNA (m): sc-29966, CD154 shRNA Plasmid (h): sc-29965-SH, CD154 shRNA Plasmid (m): sc-29966-SH, CD154 shRNA (h) Lentiviral Particles: sc-29965-V and CD154 shRNA (m) Lentiviral Particles: sc-29966-V.

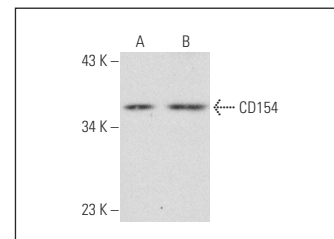
Molecular Weight of CD154: 36 kDa.

Positive Controls: WEHI-3 cell lysate: sc-3815, human liver extract: sc-363766 or mouse liver extract: sc-2256.

DATA



CD154 (K-19): sc-1594. Western blot analysis of CD154 expression in human liver (A) and mouse liver (B) tissue extracts.



CD154 (K-19): sc-1594. Western blot analysis of CD154 expression in WEHI-3 (A) and RAW 264.7 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Moore, T.M., et al. 2002. Involvement of CD40-CD40L signaling in post-ischemic lung injury. *Am. J. Physiol.* 283: L1255-L1262.
2. Li, G., et al. 2008. CD40 ligand promotes Mac-1 expression, leukocyte recruitment, and neointima formation after vascular injury. *Am. J. Pathol.* 172: 1141-1152.
3. Hu, Q., et al. 2008. Peroxisome proliferator-activated receptor-gamma1 gene therapy attenuates atherosclerosis and stabilizes plaques in apolipoprotein E-deficient mice. *Hum. Gene Ther.* 19: 287-299.
4. Imadome, K., et al. 2009. CD40 signaling activated by Epstein-Barr virus promotes cell survival and proliferation in gastric carcinoma-derived human epithelial cells. *Microbes Infect.* 11: 429-433.

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Try **CD154 (F-1): sc-374635** or **CD154 (B-4): sc-74447**, our highly recommended monoclonal alternatives to CD154 (K-19).