

CD154 (C-20): sc-978

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.

CHROMOSOMAL LOCATION

Genetic locus: CD40LG (human) mapping to Xq26.3.

SOURCE

CD154 (C-20) is available as either rabbit (sc-978) or goat (sc-978-G) polyclonal affinity purified antibody raised against a peptide mapping at the C-terminus of CD154 of human 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-978 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CD154 (C-20) is recommended for detection of CD154 of 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), 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). CD154 (C-20) is also recommended for detection of CD154 in additional species, including equine, canine, bovine, porcine and feline.

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

Molecular Weight of CD154: 36 kDa.

Positive Controls: Ramos cell lysate: sc-2216, Jurkat whole cell lysate: sc-2204 or HuT 78 whole cell lysate: sc-2208.

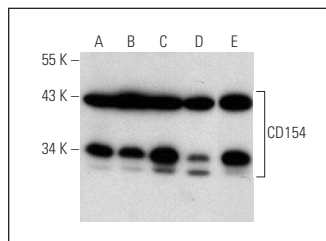
RESEARCH USE

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

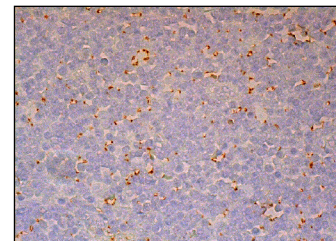
STORAGE

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

DATA



CD154 (C-20): sc-978. Western blot analysis of CD154 expression in CCRF-CEM (A), HuT 78 (B), Jurkat (C), NAMALWA (D) and Ramos (E) whole cell lysates.



CD154 (C-20)-G: sc-978-G. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing extracellular staining of non-germinal center.

SELECT PRODUCT CITATIONS

1. Kato, K., et al. 1999. The soluble CD40 ligand sCD154 in systemic lupus erythematosus. *J. Clin. Invest.* 104: 947-955.
2. Mikolajczak, S.A., et al. 2004. The modulation of CD40 ligand signaling by transmembrane CD28 splice variant in human T cells. *J. Exp. Med.* 199: 1025-1031.
3. Yamachika, E., et al. 2004. Artemisinin: an alternative treatment for oral squamous cell carcinoma. *Anticancer Res.* 24: 2153-2160.
4. Campean, V., et al. 2007. CD40-CD154 expression in calcified and non-calcified coronary lesions of patients with chronic renal failure. *Atherosclerosis* 190: 156-166.
5. Ishikawa, K., et al. 2008. Up-regulation of CD40 with juxtacrine activity in human nonsmall lung cancer cells correlates with poor prognosis. *Cancer* 113: 530-541.
6. 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.
7. Stintzing, S., et al. 2009. Differentiation patterning of vascular smooth muscle cells (VSMC) in atherosclerosis. *Virchows Arch.* 455: 171-185.
8. 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.

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