

CD154 (D-19): sc-1593

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., et al. 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.
5. Fuleihan, R., et al. 1995. Expression of the CD40 ligand in T lymphocytes and induction of IgE isotype switching. *Int. Arch. Allergy Immunol.* 107: 43-44.
6. Cheng, G., et al. 1995. Involvement of CRAF1, a relative of TRAF, in CD40 signaling. *Science* 267: 1494-1498.

CHROMOSOMAL LOCATION

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

SOURCE

CD154 (D-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-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-1593 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

CD154 (D-19) 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).

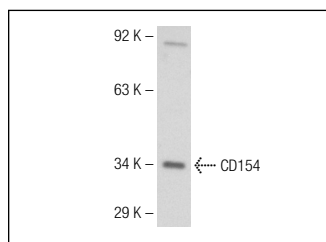
CD154 (D-19) is also recommended for detection of CD154 in additional species, including equine, canine, bovine, porcine and feline.

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.

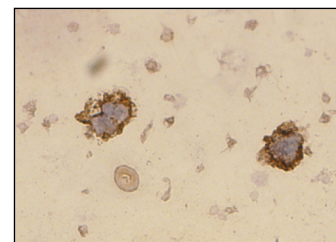
Molecular Weight of CD154: 36 kDa.

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

DATA



CD154 (D-19): sc-1593. Western blot analysis of CD154 expression in Ramos whole cell lysate.



CD154 (D-19): sc-1593. Immunoperoxidase staining of formalin-fixed human peripheral blood showing membrane localization in lymphocytes and extracellular localization in platelet surface.

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. Tong, A.W., et al. 2001. Growth-inhibitory effects of CD40 ligand (CD154) and its endogenous expression in human breast cancer. *Clin. Cancer Res.* 7: 691-703.
3. Ottaviano, A., et al. 2004. Prognostic value of CD40 in adult soft tissue sarcomas. *Clin. Cancer Res.* 10: 2824-2831.

RESEARCH USE

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

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