

CD154 (H-215): sc-9097

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 atheromatous 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.
5. Fuleihan, R., et al. 1995. Expression of the CD40 ligand in T lymphocytes and induction of IgE isotype switching. *Intl. Arch. Allergy Immunol.* 107: 43-44.

CHROMOSOMAL LOCATION

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

SOURCE

CD154 (H-215) is a rabbit polyclonal antibody raised against amino acids 47-261 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.

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 (H-215) 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).

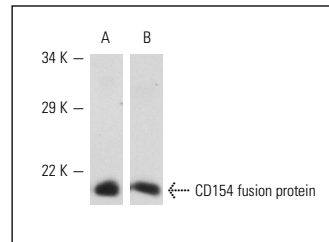
CD154 (H-215) is also recommended for detection of CD154 in additional species, including equine, bovine and porcine.

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.

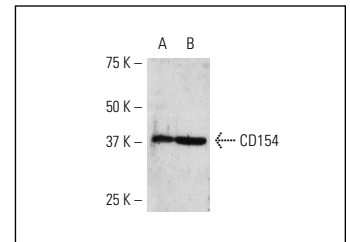
Molecular Weight of CD154: 36 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Ramos cell lysate: sc-2216 or WEHI-3 cell lysate: sc-3815.

DATA



Western blot analysis of human recombinant CD154 fusion protein (A,B). Antibodies tested include CD154 (H-215): sc-9097 (A) and CD154 (D-19): sc-1593 (B).



CD154 (H-215): sc-9097. Western blot analysis of CD154 expression in Jurkat (A) and WEHI-3 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Spadaro, M., et al. 2005. Cure of mammary carcinomas in Her-2 transgenic mice through sequential stimulation of innate (neoadjuvant interleukin-12) and adaptive (DNA vaccine electroporation) immunity. *Clin. Cancer Res.* 11: 1941-1952.
2. Gribaldo, L., et al. 2005. Interleukin 12 mediated prevention of tumorigenicity in murine cell lines derived from CD40L transgenic mice. *Exp. Mol. Pathol.* 79: 236-243.
3. Crist, S.A., et al. 2008. Nuclear factor of activated T cells (NFAT) mediates CD154 expression in megakaryocytes. *Blood* 111: 3553-3561.

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Try **CD154 (F-1): sc-374635** or **CD154 (B-4): sc-74447**, our highly recommended monoclonal alternatives to CD154 (H-215).