SANTA CRUZ BIOTECHNOLOGY, INC.

CD154 (MR1): sc-18879

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 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

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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., Ahern, D. and Geha, R.S. 1995. Expression of the CD40 ligand in T lymphocytes and induction of IgE isotype switching. Int. Arch. Allergy Immunol. 107: 43-44.
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7. Rothe, M., Sarma, V., Dixit, V.M. and Goeddel, D.V. 1995. TRAF2-mediated activation of NFκB by TNF receptor 2 and CD40. Science 269: 1424-1427.

CHROMOSOMAL LOCATION

Genetic locus: Cd40lg (mouse) mapping to X A5.

SOURCE

CD154 (MR1) is an Armenian hamster monoclonal antibody raised against activated Th1 clone D1.61 of mouse origin.

STORAGE

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

PRODUCT

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

Available as phycoerythrin (sc-18879 PE) or fluorescein (sc-18879 FITC) conjugates for flow cytometry, 100 tests.

Available azide-free for biological studies, sc-18879 L, 200 µg/0.1 ml.

APPLICATIONS

CD154 (MR1) is recommended for detection of CD154 of mouse origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

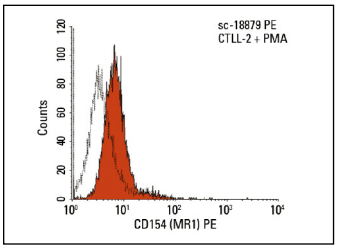
Suitable for use as control antibody for CD154 siRNA (m): sc-29966, CD154 shRNA Plasmid (m): sc-29966-SH and CD154 shRNA (m) Lentiviral Particles: sc-29966-V.

Molecular Weight of CD154: 36 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Immunofluorescence: use goat anti-Armenian hamster IgG-FITC: sc-2446 (dilution range: 1:100-1:400) or goat anti-Armenian hamster IgG-TR: sc-2997 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



CD154 (MR1) PE: sc-18879 PE. FCM analysis of PMA-stimulated CTLL-2 cells. Black line histogram represents the isotype control, normal armenian hamster IgG, sc-2875.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.