

anti-CD40 antibody, mouse monoclonal (5C3), Biotin conjugated

72-031 50 µg

CD40 is a 45-50-kDa glycoprotein belonging to the tumor necrosis factor (TNF) receptor superfamily. **CD40** is specifically expressed on the surface of B cells and specialized antigen-presenting cells such as dendritic cells and macrophages. **CD40** interacts with the CD40 ligand (CD154) which is found primarily on T cells, playing a role in both humoral and cell-mediated immune responses. Activation of **CD40** on B cells by CD40 ligand causes B cell proliferation, differentiation, immunoglobulin isotype switching, germinal center formation, and stimulation of the humoral memory response.

This antibody reacts with a 45-48 kDa type I integral membrane glycoprotein present on peripheral blood and tonsillar B cells, but not expressed on terminally differentiated B cells.

The antibody against human **CD40** was produced from hybridoma (5C3) cultured in serum-free medium and purified under mild conditions by proprietary chromatography processes.

Applications:

1. Flowcytometry (Ref2)
2. Immunohistochemistry (acetone-fixed frozen section; indirect immuno-staining)

Isotype: Mouse IgG1κ

Immunogen: Recombinant extracellular domain of CD40

Conjugate: [Biotin] / [IgG] = 7.1

Form: 0.75mg/ml in PBS, 50% glycerol,
filter-sterilized

Specificity: Human

Storage: Shipped at 4°C and stored at -20°C

Data Link: Swiss-Prot [P25942](#)

References: This antibody is used in ref.2 and 3.

1. Inui S *et al* (1990) "Identification of the intracytoplasmic region essential for signal transduction through a B cell activation molecule, CD40." *Eur J Immunol* **20**: 1747-1753 PMID: [1698631](#)
2. Yasui T *et al* (2002) "Dissection of B cell differentiation during primary immune responses in mice with altered CD40 signals." *Int Immunol* **14**: 319-329 PMID: [11867568](#)
3. Ishida I *et al* (2003) "Involvement of CD100, a lymphocyte semaphoring, in the activation of the human immune system via CD72: implications for the regulation of immune and inflammatory responses." *Int Immunol.* **15**: 1027-1034 PMID: [12882840](#)

Related products: #72-030 anti-CD40 antibody (5C3). #72-032 anti-CD40 antibody (5C3), FITC.

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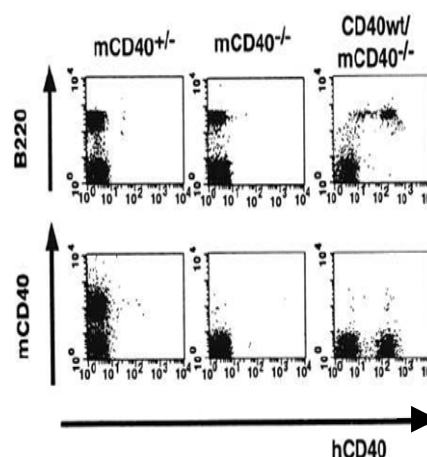


Fig.1 B cell-specific expression of h (human) CD40 in transgenic mice (ref.2).

Splenocytes from m (mouse) CD40^{+/+}, mCD40^{-/-} and hCD40 wild type/mCD40^{-/-} mice were stained with monoclonal antibodies against mCD40, B220 and hCD40 (5C3) and analyzed by flow cytometry. hCD40 molecules were expressed specifically on B220⁺ B cells.