

Anti-CD40 Antibody, Mouse Monoclonal (5C3), Biotin Conjugated

Catalog # 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. Flow cytometry
2. Immunohistochemistry (acetone-fixed frozen section; indirect immuno-staining)

Specifications

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:

1. Inui S *et al* (1990) *Eur J Immunol* **20**: 1747-1753 PMID: [1698631](#)
2. Yasui T *et al* (2002) *Int Immunol* **14**: 319-329 PMID: [11867568](#)
3. Ishida I *et al* (2003) *Int Immunol*. **15**: 1027-1034 PMID: [12882840](#)

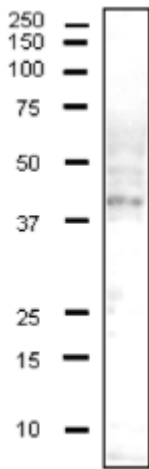


Fig.1 Detection of endogenous CD40 in whole cell extract of MCF7 cells by Western blot with biotin conjugated anti-CD40 antibody (5C3). Proteins in the extract were separated by 12.5% SDS-PAGE and blotted by wet system. Biotin-conjugated antibody (5C3) was used at 1/1,000 dilution and HRP-conjugated streptavidin was used at 1/1000 dilution.

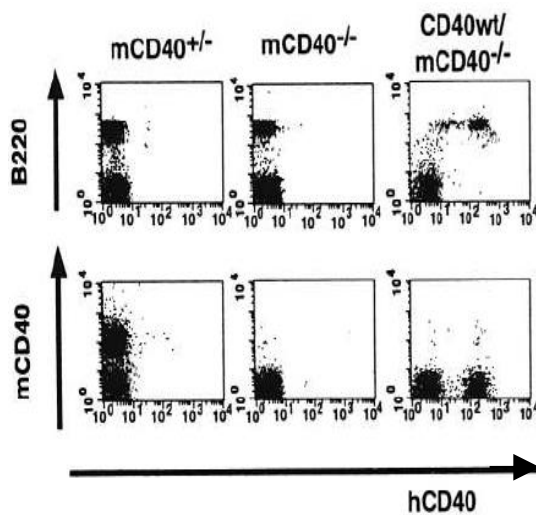


Fig. 2 Flow-cytometry analysis of human CD40 expression in transgenic mouse. Splenocytes from m (mouse) CD40^{+/-} , mCD40^{-/-} and hCD40 wild type/mCD40^{-/-} mice were stained with monoclonal antibodies against mCD40, B220 and hCD40 (5C3) and analyzed by flow cytometry. hCD40 molecules were expressed specifically on B220⁺ B cells.