

Product Information

ANTI-MOUSE CD40 Developed in Goat, Affinity Isolated Antibody

Product Number **C 9224**

Product Description

Anti-Mouse CD40 is developed in goat using a purified recombinant mouse CD40, extracellular domain, expressed in mouse NSO cells as immunogen. The antibody is purified using mouse CD40 affinity chromatography.

Anti-Mouse CD40 recognizes recombinant mouse CD40 by ELISA and immunoblotting. By immunoblotting and ELISA, the antibody shows <1% cross-reactivity recombinant human CD40.

Anti-Mouse CD40 may be used in ELISA and immunoblotting. It is not recommended for B cell activation.

CD40 (48-50 kDa) is a transmembrane glycoprotein mainly expressed on the surface of B cells and is also expressed on monocytes, dendritic cells, endothelial cells, and epithelial cells.¹⁻⁴ CD40 is a member of the tumor necrosis factor (TNF)^{1,2} receptor superfamily, which includes the low affinity nerve growth factor (NGF) receptor and CD95/Fas.^{4,5} CD40 ligand (CD40L, CD154, gp39, TRAM) belongs to the TNF gene family¹⁻³ and is expressed more widely than activated CD4+ T cells. Following interaction with CD40L, CD40 mediates a number of major immunoregulatory functions, is central to the control of thymus-dependent humoral immunity and may be critical in the development of cell-mediated immune responses. Other biological actions include B cell homotypic adhesion, proliferation, immunoglobulin isotype switch, and secretion.¹⁻⁴ Activation of CD40 has also been shown to inhibit the growth of certain B cell lymphoma⁶⁻⁹ and to induce the death of transformed cells of mesenchymal or epithelial origin.¹⁰⁻¹²

In their resting state up to 50% of B cells may express CD40L in their cytoplasm, but not on the surface and this cytoplasmic CD40L is readily released as a soluble receptor. The proportion of cells expressing and the amount of CD40L is increased by signaling through immunoglobulin (Ig) or CD38.¹³

The signal transduction pathways triggered through CD40 have not yet been fully delineated. Early biochemical events include activation of Ras,¹⁴ of Lyn and Syk protein tyrosine kinases,¹⁵⁻¹⁷ phosphorylation and activation of phospholipase C2 and phosphoinositide-3-kinase,¹⁶ and induction of mitogen-activated protein kinases.¹⁸⁻²⁰ Activation processes seem to be initiated by association of the CD40 receptor with signaling molecules of the TRAF family.^{1,2}

Reagents

Anti-Mouse CD40 is supplied lyophilized from a 0.2 µm filtered solution of phosphate buffered saline. Endotoxin level is < 10 ng per mg antibody as determined by the LAL method.

Preparation Instructions

To one vial of lyophilized powder, add 1 ml of 0.2 µm-filtered PBS to produce a 0.1 mg/ml stock solution of antibody. If aseptic technique is used, no further filtration should be needed for use in cell culture environments

Storage/Stability

Prior to reconstitution, store at -20 °C. Reconstituted product may be stored at 2-8 °C for at least one month. For prolonged storage, freeze in working aliquots at -20 °C. Avoid repeated freezing and thawing

Product Profile

For indirect ELISA, a working concentration of 0.5-1.0 µg/ml is determined to detect a limit of ~1 ng/well of recombinant mouse CD40.

For indirect immunoblotting, a working concentration of 0.1-0.2 µg/ml is determined using mouse CD40 at 0.5 ng/lane and 5 ng/lane under non-reducing and reducing conditions, respectively.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working dilutions by titration test.

References

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