# CD40 Antibody Rabbit Polyclonal (R32520)

| Catalog No. | Formulation | Size |
|---|---|---|
| R32520 | 0.5mg/ml if reconstituted with 0.2ml sterile DI water | 100 ug |

**Bulk quote request**

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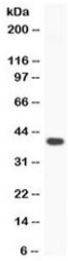
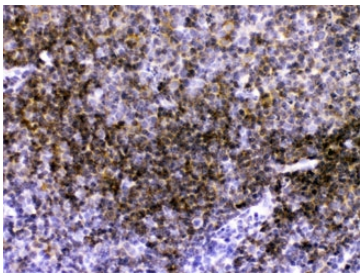
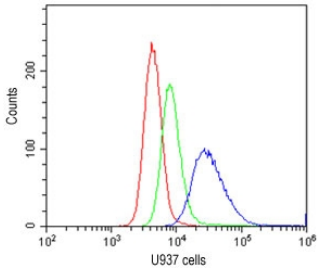
|---|---|
| **Availability** | 1-3 business days |
| **Species Reactivity** | Human, Mouse |
| **Format** | Antigen affinity purified |
| **Host** | Rabbit |
| **Clonality** | Polyclonal (rabbit origin) |
| **Isotype** | Rabbit IgG |
| **Purity** | Antigen affinity |
| **Buffer** | Lyophilized from 1X PBS with 2.5% BSA, 0.025% sodium azide |
| **UniProt** | P27512 |
| **Localization** | Cytoplasmic, cell membrane |
| **Applications** | Western Blot : 0.5-1ug/ml<br>IHC (FFPE) : 1-2ug/ml<br>Flow Cytometry : 1-3ug/10^6 cells<br>ELISA : 0.5-1ug/ml (mouse protein tested); request BSA-free format for coating |
| **Limitations** | This CD40 antibody is available for research use only. |




Western blot testing of mouse spleen lysate with CD40 antibody at 0.5ug/ml. Predicted molecular weight is 32-45 kDa depending on glycosylation level.



Immunohistochemistry of CD40 antibody in FFPE mouse spleen tissue. Mouse spleen shows strong membranous and cytoplasmic HRP-DAB brown staining in lymphoid cells within splenic follicles and periarteriolar lymphoid regions, consistent with CD40 expression in B lymphocytes and antigen-presenting cells. This CD40 Antibody Rabbit Polyclonal was applied at 1 ug/ml following heat-induced epitope retrieval by steaming sections in pH 6 citrate buffer for 20 minutes prior to staining.




Flow cytometry testing of human U937 cells with CD40 antibody at 1ug/10^6 cells (cells blocked with goat sera); Red=cells alone, Green=isotype control, Blue=CD40 antibody.

## Description

CD40 antibody recognizes CD40 molecule, also known as Tumor necrosis factor receptor superfamily member 5 antibody and TNFRSF5 antibody, a type I transmembrane glycoprotein that belongs to the tumor necrosis factor receptor superfamily. CD40 is expressed primarily on the cell surface of B lymphocytes, dendritic cells, macrophages, and other antigen-presenting cells, where it serves as a central regulator of adaptive immune responses. CD40 Antibody Rabbit Polyclonal is developed to detect endogenous CD40 expression in research applications examining immune activation and lymphoid biology.

CD40 plays a pivotal role in T cell-dependent humoral immunity. Interaction between CD40 and its ligand CD154, also known as CD40 ligand or CD40L, expressed on activated CD4-positive T cells, induces receptor clustering and recruitment of TNF receptor-associated factors. This initiates downstream signaling cascades including NF-kappaB, MAPK, and PI3K pathways. These pathways promote B cell proliferation, immunoglobulin class switching, germinal center formation, and memory B cell differentiation. In dendritic cells and macrophages, CD40 engagement enhances antigen presentation and cytokine secretion, strengthening T cell priming and immune coordination.

CD40 antibody studies have significantly advanced understanding of immune regulation, chronic inflammation, and tumor immunology. CD40 is highly expressed in reactive lymphoid tissues and in a variety of B cell malignancies such as diffuse large B cell lymphoma, follicular lymphoma, and chronic lymphocytic leukemia. CD40 expression has also been observed in certain epithelial and endothelial cells under inflammatory conditions, linking CD40 signaling to autoimmune disease, atherosclerosis, and tumor-immune microenvironment interactions.

The CD40 protein contains extracellular cysteine-rich domains responsible for ligand binding and a cytoplasmic tail that mediates intracellular signaling through adaptor protein recruitment rather than intrinsic enzymatic activity. The CD40 gene is located on chromosome 20q13.12, and its expression is tightly regulated during B cell maturation and immune activation. Dysregulated CD40 signaling may contribute to aberrant immune activation and pathological inflammation.

CD40 Antibody Rabbit Polyclonal recognizes CD40 in research settings and supports studies of B cell activation, antigen-presenting cell function, and immune signaling networks. As a polyclonal reagent, it targets multiple epitopes on the CD40 protein, facilitating robust detection of CD40 expression across diverse experimental models.

## Application Notes

Differences in protocols and secondary/substrate sensitivity may require the CD40 antibody to be titrated for optimal performance.

## Immunogen

Amino acids L20-R193 from the mouse protein were used as the immunogen for the CD40 antibody.

## Storage

After reconstitution, the CD40 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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