

**Analyte Specific Reagent.**

Analytical and performance characteristics are not established.

**SPECIFICITY**

The CD40 antigen is a 44-48 kDa type I integral membrane protein of the tumor necrosis factor receptor (TNFR) superfamily (1, 2). This antigen is found on B cell lines, is strongly expressed by interdigitating cells (IDC), basal epithelial cells, and is also present on macrophages, some endothelial cells, and follicular dendritic cells. It is a pan-B marker, absent only from terminally differentiated plasma cells (2).

CD40 is implicated in the process of B cell selection in the germinal centre. Studies demonstrated that CD40 monoclonal antibodies (mAbs) induce strong homotypic adhesions in resting B cells and, together with interleukin-4 (IL-4) maintain the cell cycle of blasts of the B lineage. They also can promote the switch to IgE secretion (3). Activated B cells via CD40 antigen in the presence of IL-10 differentiate into plasma cells and secrete large amounts of immunoglobulins (4). The CD154, (CD40 ligand) is a membrane glycoprotein on activated T cells that induces B cell proliferation and immunoglobulin secretion (5, 6). CD154 is also expressed on activated platelets and triggers an inflammatory reaction of endothelial cells (7).

The MAB89 mAb reacts specifically with CD40 (8).

The MAB89 mAb was assigned to the CD40 cluster of differentiation at the 6th International Workshop on Human Leucocyte Differentiation Antigens in Kobe, Japan, in 1996 (2).

**REAGENT**

IOTest CD40-APC  
 Conjugated Antibody  
 PN B30636 - 0.5 mL - Liquid

<b>Clone</b>	MAB89
<b>Isotype</b>	IgG1, Mouse
<b>Immunogen</b>	Anti- $\mu$ - activated tonsillar human B cells
<b>Hybridoma Source</b>	NS1 x balb/c Ascites fluid or supernatant of in vitro cultured hybridoma cells.
<b>Purification</b>	Affinity chromatography
<b>Conjugation</b>	Allophycocyanin (APC)
<b>Molar Ratio</b>	APC / Ig : 0.5 - 1.5
<b>Fluorescence</b>	Excites at 633/638 nm Emits at 660 nm

**REAGENT CONTENTS**

This antibody is provided in phosphate-buffered saline, containing 0.1% sodium azide and 2 mg/mL bovine serum albumin. Concentration: See lot specific Certificate of Analysis at [www.beckmancoulter.com](http://www.beckmancoulter.com).

**STATEMENTS OF WARNING**

1. This reagent contains 0.1% sodium azide. Sodium azide under acid conditions yields hydrazoic acid, an extremely toxic compound. Azide compounds should be flushed with running water while being discarded. These precautions are recommended to avoid deposits in metal piping in which explosive conditions can develop. If skin or eye contact occurs, wash excessively with water.
2. Specimens, samples and all material coming in contact with them should be considered potentially infectious and disposed of with proper precautions.
3. Never pipet with mouth and avoid contact of samples with skin and mucous membranes.
4. Do not use antibody beyond the expiration date on the label.
5. Do not expose reagents to strong light during storage or incubation.
6. Avoid microbial contamination of reagents or incorrect results might occur.
7. Use good laboratory practices when handling this reagent.
8. Any change in the physical appearance of the reagents may indicate deterioration and the reagent should not be used.

**STORAGE AND HANDLING CONDITIONS AND STABILITY**

This reagent is stable up to the expiration date when stored at 2 – 8°C. Do not freeze. No reconstitution is necessary. This monoclonal antibody may be used directly from the vial. Bring reagent to 18 – 25°C prior to use.

**SELECTED RESEARCH REFERENCES**

1. Katira, A., Holder, M., Pound, J., Gordon, J. "CD40 workshop panel report", 1995, in Leucocyte Typing V, Schlossman, S.F., et al Eds, Oxford University Press, 547-550.
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3. Rousset, F., Garcia, E., Banchereau, J., "Cytokine-induced proliferation and immunoglobulin production of human B lymphocytes triggered through their CD40 Antigen", 1991, J. Exp. Med., 173, 705-710.

4. Rousset, F., Garcia, E., Defrance, T., Péronne, C., Vezzio, N., Hsu, D.H., Kastelein, R., Moore, K.W., Banchereau J., "Interleukin 10 is a potent growth and differentiation factor for activated human B lymphocytes", 1992, Proc. Natl. Acad. Sci. USA., 89, 1890-1893.
5. Lane, P., Traunecker, A., Hubele, S., Inui, S., Lanzavecchia, A., Gray, D., "Activated human T cells express a ligand for the human B cell-associated antigen CD40 which participates in T cell-dependent activation of B lymphocytes", 1992, Eur. J. Immunol., 22, 2573-2578.
6. Brugnoli, D., Airo, P., Graf, D., Marconi, M., Molinari, C., Braga, D., Malacarne, F., Soresina, A., Ugazio, A.G., Cattaneo, R., Kroccek, R.A., Notarangelo, L.D., "Ontogeny of CD40 expression by activated peripheral blood lymphocytes in humans", 1996, Immunol. Letters, 49, 27-30.
7. Henn, V., Slupsky, J.R., Gräfes, M., Anagnostopoulos, I., Förster, R., Müller-Bergahaus, G., Kroccek, R.A., "CD40 ligand on activated platelets triggers an inflammatory reaction of endothelial cells", 1998, Nature, 391, 591-594.
8. Vallé, A., Zuber, C.E., Defrance, T., Djossou, O., De Rie, M., Banchereau, J., "Activation on human B lymphocytes through CD40 and interleukin 4", 1989, Eur. J. Immunol., 19, 1463-1467.

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