Human CD14 Antibody

Recombinant Monoclonal Rabbit IgG Clone # 2551F
Catalog Number: MAB10461

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human CD14 in direct ELISAs.
Source	Recombinant Monoclonal Rabbit IgG Clone # 2551F
Purification	Protein A or G purified from cell culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human CD14 Thr20-Cys352 Accession # P08571
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

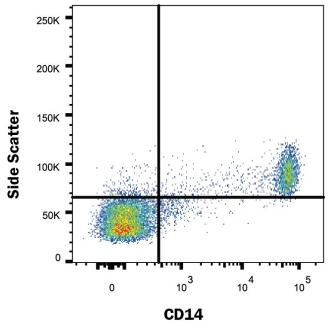
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Flow Cytometry	0.25 µg/10^6 cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
Neutralization	Measured by it ability to neutralize Recombinant Human CD14 (10 ng/mL) induced secretion of IL-8 in the THP-1 human acute monocytic leukemia cell line. The Neutralization Dose (ND_{50}) is typically 50-500 ng/mL in the presence of 15 ng/mL LPS and 0.5 ng/mL Recombinant Human LBP.	

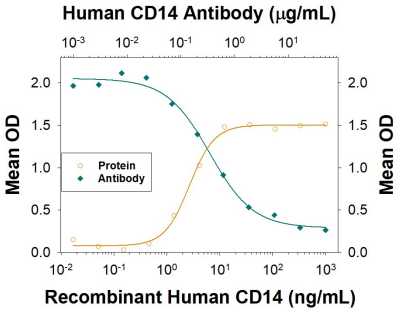
DATA

Flow Cytometry



Detection of CD14 in Human PBMCs by Flow Cytometry. Human peripheral blood mononuclear cells (PBMCs) were stained with Rabbit Anti-Human CD14 Monoclonal Antibody (Catalog # MAB10461) followed by Goat anti-Rabbit IgG APC-conjugated Secondary Antibody (Catalog # F0111). View our protocol for Staining Membrane-associated Proteins.

Neutralization



IL-8 Secretion Induced by CD14 and Neutralization by Human CD14 Antibody. CD14 stimulates IL-8 secretion in the THP-1 human acute monocytic leukemia cell line in a dose-dependent manner (orange line) as measure by Human IL-8/CXCL8 Quantikine ELISA Kit (Catalog # D8000C). IL-8 secretion elicited by Recombinant Human CD14 (Catalog # 383-CD, 10 ng/mL) is neutralized (green line) by increasing concentrations of Rabbit Anti-Human CD14 Monoclonal Antibody (Catalog # MAB10461). The ND_{50} is typically 50-500 ng/mL in the presence of 15 ng/mL LPS and 0.5 ng/mL Recombinant Human LBP (Catalog # 870-LP).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

CD14 is a 55 kDa cell surface glycoprotein that is preferentially expressed on monocytes/macrophages. The human CD14 cDNA encodes a 375 amino acid (aa) residue precursor protein with a 19 aa signal peptide and a C-terminal hydrophobic region characteristic for glycosylphosphatidyinositol (GPI)-anchored proteins. Human CD14 has four potential N-linked glycosylation sites and also bears O-linked carbohydrates. The amino acid sequence of human CD14 is approximately 65% identical with the mouse, rat, rabbit, and bovine proteins. CD14 is a pattern recognition receptor that binds lipopolysaccharides (LPS) and a variety of ligands derived from different microbial sources. The binding of CD14 with LPS is catalyzed by LPS-binding protein (LBP). The toll-like-receptors have also been implicated in the transduction of CD14-LPS signals. Similar to other GPI-anchored proteins, soluble CD14 can be released from the cell surface by phosphatidyinositol-specific phospholipase C. Soluble CD14 has been detected in serum and body fluids. High concentrations of soluble CD14 have been shown to inhibit LPS-mediated responses. However, soluble CD14 can also potentiate LPS response in cells that do not express cell surface CD14.

References:

1. Wright, S.D. *et al.* (1990) Science **249**:1431.
2. Pugin, J. *et al.* (1993) Proc. Natl. Acad. Sci. USA **90**:2744.
3. Beutler, B. (2000) Current Opinion in Immunology **12**:20.
4. Stelter, F. (2000) Chem. Immunol. **74**:25.

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