

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human CD163 in direct ELISAs. In sandwich immunoassays, no cross-reactivity or interference with recombinant mouse (rm) CD163, rmCD6, or recombinant human CD6 is observed.
Source	Monoclonal Mouse IgG ₁ Clone # 215930
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human CD163 Gly41-Ser1045 Accession # CAA80543
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 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.

Human CD163 Sandwich Immunoassay		Reagent
ELISA Capture	2-8 µg/mL	Human CD163 Antibody (Catalog # MAB16071)
ELISA Detection	0.5-2.0 µg/mL	Human CD163 Biotinylated Antibody (Catalog # BAM16072)
Standard		Recombinant Human CD163 (Catalog # 1607-CD)

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	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 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.

BACKGROUND

CD163, previously called M130 or p155, is a 130-160 kDa type I transmembrane glycoprotein that belongs to group B of the cysteine-rich scavenger receptor family (1-3). It is essential for clearance of hemoglobin-haptoglobin (Hb-Hp) complexes in the liver, spleen and circulation (4). The human CD163 contains a 41 amino acid (aa) signal sequence, a 1009 aa extracellular domain (ECD) with 9 scavenger receptor cysteine-rich (SRCR) domains, a 22 aa transmembrane segment, and a 39-84 aa cytoplasmic region (1). The third SRCR domain is crucial for calcium-dependent binding of hemoglobin/haptoglobin complexes (3). Three splice forms (isoforms 2, 3 and 4) vary within their intracellular regions (1, 5), while one isoform (# 4) also has a 34 aa insert between SRCR domains 5 and 6 within the ECD. While all are expressed, isoform 3 is the most abundant, being generally expressed on the cell surface and most active in endocytosis (5). An approximately 130 kDa soluble form of human CD163 (sCD163) is assumed to contain virtually all of the ECD, which shares 74%, 75%, 84%, 86%, 86% and 87% aa identity with mouse, rat, bovine, equine, porcine and canine CD163 ECD, respectively (6, 7). It is released from the cell surface by proteolysis after oxidative stress or inflammatory stimuli, including bacterial endotoxins and activation of the Toll-like receptors TLR2 or TLR5 (7-10). Expression of CD163 is constitutive, and induced by glucocorticoids, IL-10, IL-6 or endotoxin on circulating monocytes, tissue macrophages, and at low levels on monocyte-derived dendritic cells (1, 2, 11, 12). In addition to clearing Hb-Hp complexes, CD163 is also a scavenger receptor for free Hb (if Hp is depleted) and TWEAK (TNF-like weak inducer of apoptosis), and can function as an erythroblast adhesion receptor (4, 13-15).

References:

1. Law, S.K.A. *et al.* (1993) *Eur. J. Immunol.* **23**:2320.
2. Sulahian, T.H. *et al.* (2000) *Cytokine* **12**:1312.
3. Madsen, M. *et al.* (2004) *J. Biol. Chem.* **279**:51561.
4. Kristiansen, M. *et al.* (2001) *Nature* **409**:198.
5. Nielsen, M.J. *et al.* (2006) *J. Leukoc. Biol.* **79**:837.
6. Moller, H.J. *et al.* (2002) *Blood* **99**:378.
7. Droste, A. *et al.* (1999) *Biochem. Biophys. Res. Commun.* **256**:110.
8. Hintz, K. A. *et al.* (2002) *J. Leukoc. Biol.* **72**:711.
9. Weaver, L.K. *et al.* (2006) *J. Leukoc. Biol.* **80**:26.
10. Timmerman, M. and P. Hogger (2005) *Free Radic. Biol. Med.* **39**:98.
11. Buechler, C. *et al.* (2000) *J. Leukoc. Biol.* **67**:97.
12. Pulford, K.A. *et al.* (1989) *J. Clin. Pathol.* **42**:414.
13. Schaer, D.J. *et al.* (2006) *Blood* **107**:373.
14. Bover, L.C. *et al.* (2007) *J. Immunol.* **178**:8183.
15. Fabriek, B.O. *et al.* (2007) *Blood* **109**:5223.