

CD14 (N-15): sc-6998

BACKGROUND

Lipopolysaccharide (LPS) elicits the secretion of mediators and cytokines produced by activated macrophages and monocytes. CD14 is a glycosylphosphatidylinositol (GPI)-anchored protein found on the surfaces of monocytes and polymorphonuclear leukocytes. CD14 functions as a receptor for LPS, resulting in the secretion of various proteins. An important component in the LPS activation of monocytes through the CD14 receptor is the "adapter molecule", lipopolysaccharide binding protein (LBP). There are two forms of CD14, a membrane-associated form (mCD14), and a soluble form (sCD14). mCD14 responds to LPS alone and facilitates the secretion of proteins, while cells not expressing mCD14 fail to respond to LPS. The cells that lack mCD14 respond to LPS/LBP in the presence of sCD14.

REFERENCES

1. Simmons, D.L., et al. 1989. Monocyte antigen CD14 is a phospholipid anchored membrane protein. *Blood* 73: 284-289.
2. Schumann, R.R. 1992. Function of lipopolysaccharide (LPS)-binding protein (LBP) and CD14, the receptor for LPS/LBP complexes: a short review. *Res. Immunol.* 143: 11-15.
3. Kielan, T.L., et al. 1995. CD14 and other recognition molecules for lipopolysaccharide: a review. *Immunopharmacology* 29: 187-205.
4. Detmers, P.A., et al. 1995. Endotoxin receptors (CD14) are found with CD16 (Fc γ RIII) in an intracellular compartment of neutrophils that contains alkaline phosphatase. *J. Immunol.* 155: 2085-2095.
5. Parsons, P.E., et al. 1995. Neutrophil response to endotoxin in the adult respiratory distress syndrome: role of CD14. *Am. J. Respir. Cell Mol. Biol.* 13: 152-160.

CHROMOSOMAL LOCATION

Genetic locus: CD14 (human) mapping to 5q31.3.

SOURCE

CD14 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of CD14 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-6998 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

CD14 (N-15) is recommended for detection of CD14 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

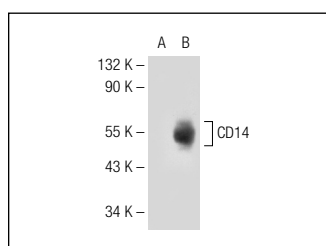
CD14 (N-15) is also recommended for detection of CD14 in additional species, including bovine.

Suitable for use as control antibody for CD14 siRNA (h): sc-29248, CD14 shRNA Plasmid (h): sc-29248-SH and CD14 shRNA (h) Lentiviral Particles: sc-29248-V

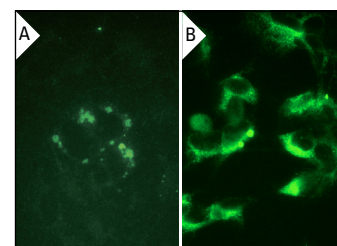
Molecular Weight of CD14: 53-55 kDa.

Positive Controls: CD14 (h): 293 Lysate: sc-112351, CCRF-CEM cell lysate: sc-2225 or BJAB whole cell lysate: sc-2207.

DATA



CD14 (N-15): sc-6998. Western blot analysis of CD14 expression in non-transfected: sc-110760 (A) and human CD14 transfected: sc-112351 (B) 293 whole cell lysates.



CD14 (N-15): sc-6998. Immunofluorescence staining of methanol-fixed untransfected (A) and human CD14 transfected HEK 293 cells (B).

SELECT PRODUCT CITATIONS

1. Pfeiffer, A., et al. 2001. Lipopolysaccharide and ceramide docking to CD14 provokes ligand-specific receptor clustering in rafts. *Eur. J. Immunol.* 31: 3153-3164.
2. Borkowski, A., et al. 2002. Reactive nitrogen intermediates in giant cell arteritis: selective nitration of neocapillaries. *Am. J. Pathol.* 161: 115-123.
3. Beschorner, R., et al. 2002. CD14 expression by activated parenchymal microglia/macrophages and infiltrating monocytes following human traumatic brain injury. *Acta Neuropathol.* 103: 541-549.
4. Beschorner, R., et al. 2002. Infiltrating CD14⁺ monocytes and expression of CD14 by activated parenchymal microglia/macrophages contribute to the pool of CD14⁺ cells in ischemic brain lesions. *J. Neuroimmunol.* 126: 107-115.
5. Deininger, M.H., et al. 2003. Expression and release of CD14 in astrocytic brain tumors. *Acta Neuropathol.* 106: 271-277.
6. Kindle, L., et al. 2006. Human microvascular endothelial cell activation by IL-1 and TNF α stimulates the adhesion and transendothelial migration of circulating human CD14⁺ monocytes that develop with RANKL into functional osteoclasts. *J. Bone Miner. Res.* 21: 193-206.