Human LOX-1/OLR1 PerCP-conjugated Antibody

Monoclonal Mouse IgG_{2B} Clone # 331212

Catalog Number: FAB1798C
100 TESTS

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human LOX-1 in direct ELISAs and Western blots. In direct ELISAs and Western blots, this antibody does not cross-react with recombinant mouse LOX-1.
Source	Monoclonal Mouse IgG_{2B} Clone # 331212
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human LOX-1/OLR1 Ser61-Gln273 Accession # P78380
Conjugate	PerCP (Peridinin-chlorophyll Protein Complex) Excitation Wavelength: 482 and 564 nm Emission Wavelength: 675 nm
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

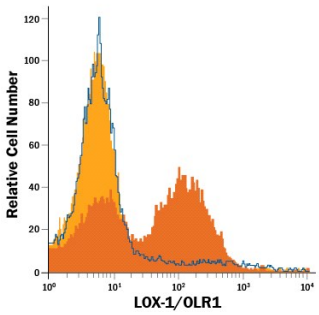
APPLICATIONS

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	10 µL/10^6 cells	See Below

DATA

Flow Cytometry



Detection of LOX-1/OLR1 in THP-1 Human Cell Line by Flow Cytometry. THP-1 human acute monocytic leukemia cell line, resting (open histogram) or treated with 50 ng/mL of PMA for 3 days (filled histogram, dark orange), was stained with Mouse Anti-Human LOX-1/OLR1 PerCP-conjugated Monoclonal Antibody (Catalog # FAB1798C) or isotype control antibody (Catalog # IC0041C; filled histogram, light orange). View our protocol for Staining Membrane-associated Proteins.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Protect from light. Do not freeze.** • 12 months from date of receipt, 2 to 8 °C as supplied.

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BACKGROUND

Lectin-like oxidized low-density-lipoprotein receptor-1 (LOX-1), also known as oxidized low-density-lipoprotein receptor-1 (OLR-1), is a 40-50 kDa type II transmembrane receptor belonging to the C-type lectin family (1). It also belongs to the functionally defined Scavenger Receptor (SR) superfamily, whose members share the common ability to bind and internalize modified forms of Low Density Lipoproteins (LDL) (2-4). LOX-1 is a founding member of the class E scavenger receptor subfamily (SR-E). It binds and supports the internalization of multiple structurally unrelated macromolecules including oxidized LDL, advanced glycation end products (AGE), activated platelets, bacteria, apoptotic or aged cells, and heat shock proteins (5-7). LOX-1 has also been implicated as an intestinal receptor involved in the transcytosis of pancreatic bile salt-dependent lipase (8). The human LOX-1 gene encodes a 273 amino acid (aa) residue protein with a short N-terminal intracellular domain, a transmembrane domain, and an extracellular stalk/neck region followed by a C-type lectin-like domain (CTLD) (1, 6). The CTLD, which is required for ligand recognition, contains the six conserved cysteine residues present in all C-type lectins, but lacks the Ca^{2+}-binding residues found in classical C-type lectins. LOX-1 can be detected on activated endothelial cells, vascular smooth muscle cells, macrophages, intestinal cells, and dendritic cells (6-8). The expression of LOX-1 is induced by proinflammatory or proatherogenic stimuli, as well as by oxidized LDL itself and hemodynamic or oxidative stress. Human LOX-1 exists on the cell surface as a covalent homodimer, that can further associate into a non-covalent-linked oligomer (9). Cell surface LOX-1 can also be cleaved by MMPs (such as MMP-1, -2, or -14) to release a soluble 32-34 kDa LOX-1 extracellular domain (10). Binding and endocytosis of oxidized LDL by LOX-1 induces oxidative stress, activates NFκB, and upregulates the expression of Monocyte Chemoattractant Protein-1 and matrix metalloproteases (5-9). LOX-1-dependent oxidized LDL uptake also induces apoptosis by inducing the expression of the pro-apoptotic Bax and downregulation of the anti-apoptotic Bcl-2 (11). Oxidized LDL plays a key role in the pathogenesis of atherosclerosis and endothelial dysfunction. Blockade of LOX-1 functions may turn out to be a suitable target for the therapeutic intervention of atherosclerosis. Over amino acids (aa) 61-273, human LOX-1 shares 61% aa sequence identity with mouse LOX-1 (adjusted for a large insert found in the mouse ECD).

References:

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