Human LDLR Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF2148

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human LDL R in direct ELISAs and Western blots. In direct ELISAs, approximately 15% cross-reactivity with recombinant mouse LDL R is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human LDL R Asp193-Arg788 Accession # P01130
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.

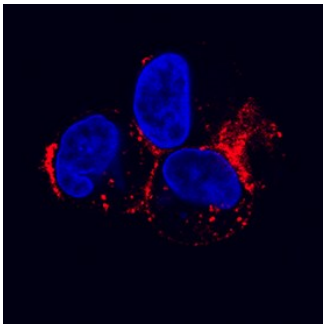
APPLICATIONS

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
Western Blot	0.1 µg/mL	Recombinant Human LDL R (Catalog # 2148-LD)
Immunocytochemistry	1-15 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below
Blockade of Receptor-ligand Interaction	In a functional ELISA, less than 5.00 µg/mL of this antibody will block 50% of the binding of Recombinant Human LDL R (Catalog # 2148-LD) to human low-density lipoprotein.	

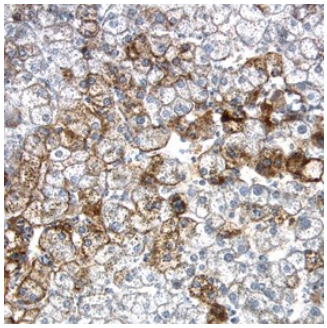
DATA

Immunocytochemistry



LDL R in HepG2 Human Cell Line. LDL R was detected in immersion fixed HepG2 human hepatocellular carcinoma cell line using Goat Anti-Human LDL R Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2148) at 1.7 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

Immunohistochemistry



LDL R in Human Liver. LDL R was detected in formalin fixed paraffin-embedded sections of human liver using Goat Anti-Human LDL R Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2148) at 15 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS. For liquid material, refer to CoA for concentration.
Shipping	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
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

The low density lipoprotein receptor (LDL R) is the founding member of the LDL R family of scavenger receptors. This family contains transmembrane molecules that are characterized by the presence of EGF repeats, complement-like repeats, and YWTD motifs that form β-propellers. Although members of the family were originally thought to be endocytic receptors, it is now clear that some members interact with adjacent cell-surface molecules, expanding their range of activities. Human LDL R is synthesized as an 860 amino acid (aa) precursor that contains a 21 aa signal sequence, a 767 aa extracellular region, a 22 aa transmembrane segment and a 50 aa cytoplasmic tail. The extracellular region is complex. It consists of seven N-terminal complement-like cysteine-rich repeats that bind ligand. Cysteine residues in this region participate in intrachain disulfide bonds. This region is followed by three EGF-like repeats with a β-propeller YWTD containing motif. The EGF-like repeats are responsible for ligand bonding and dissociation. Finally, there is a 50 aa membrane proximal Ser/Thr-rich region that serves as a carbohydrate attachment point. There is extensive O-linked and modest N-linked glycosylation. Thus the receptor's predicted molecular weight of 93 kDa is increased to a native molecular weight of 120 - 160 kDa. Within the 50 aa cytoplasmic tail, there is an NPXY motif that links the receptor to clathrin pits. The extracellular region of human LDL R is 51% aa identical to the extracellular region of human VLDL R, and 79% aa identical to the extracellular region of mouse LDL R. LDL R is constitutively expressed and binds apoB of LDL and apoE of VLDL. It is responsible for clearing 70% of plasma LDL in liver. Mutations in the LDL R gene cause the autosomal dominant disorder, familial hypercholesterolemia.

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