abcam

Product datasheet

Anti-LDL Receptor antibody [EP1553Y] ab52818

KO VALIDATED Recombinant RabMAb

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Overview

Product name	Anti-LDL Receptor antibody [EP1553Y]
Description	Rabbit monoclonal [EP1553Y] to LDL Receptor
Host species	Rabbit
Specificity	Some optimisation may be required for detection of the target protein due to low levels of endogenous expression in some samples. Please see images below for suitable positive controls.
Tested applications	**Suitable for:** IHC-P, WB **Unsuitable for:** Flow Cyt or ICC/IF
Species reactivity	**Reacts with:** Mouse, Human
Immunogen	Synthetic peptide within Human LDL Receptor aa 800 to the C-terminus (C terminal). The exact sequence is proprietary. Database link: **P01130**
Positive control	WB: HeLa and RAW264.7 cell lysate. HepG2 whole cell lysate. Mouse liver, lung and colon lysate. Human liver and plasma lysate. IHC-P: Human hepatocellular carcinoma and liver tissue.
General notes	This product is a recombinant monoclonal antibody, which offers several advantages including: - High batch-to-batch consistency and reproducibility - Improved sensitivity and specificity - Long-term security of supply - Animal-free production For more information **see here**. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C. Stable for 12 months at -20°C.
Storage buffer	pH: 7.20 Preservative: 0.01% Sodium azide

	Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.1% BSA
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EP1553Y
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab52818 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-P	★★★★★ (2)	1/500. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. See **IHC antigen retrieval protocols**.
WB	★★★★☆ (7)	1/500 - 1/1000. Detects a band of approximately 100 kDa (predicted molecular weight: 95 kDa).

Application notes Is unsuitable for Flow Cyt or ICC/IF.

Target

Function Binds LDL, the major cholesterol-carrying lipoprotein of plasma, and transports it into cells by endocytosis. In order to be internalized, the receptor-ligand complexes must first cluster into clathrin-coated pits. In case of HIV-1 infection, functions as a receptor for extracellular Tat in neurons, mediating its internalization in uninfected cells.

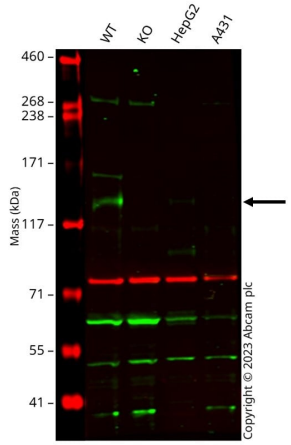
Involvement in disease Defects in LDLR are the cause of familial hypercholesterolemia (FH) [MIM:143890]; a common autosomal semi-dominant disease that affects about 1 in 500 individuals. The receptor defect impairs the catabolism of LDL, and the resultant elevation in plasma LDL-cholesterol promotes deposition of cholesterol in the skin (xanthelasma), tendons (xanthomas), and coronary arteries (atherosclerosis).

Sequence similarities Belongs to the LDLR family.
Contains 3 EGF-like domains.
Contains 7 LDL-receptor class A domains.
Contains 6 LDL-receptor class B repeats.

Post-translational modifications N- and O-glycosylated.
Ubiquitinated by MYLIP leading to degradation.

Cellular localization Cell membrane. Endomembrane system. Membrane > clathrin-coated pit. Found distributed from the plasma membrane to intracellular compartments.

Images



Western blot - Anti-LDL Receptor antibody [EP1553Y] (ab52818)

All lanes : Anti-LDL Receptor antibody [EP1553Y] (ab52818) at 1/1000 dilution

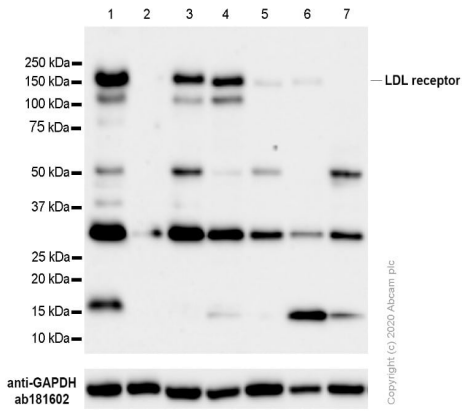
Lane 1 : Wild-type HeLa cell lysate
Lane 2 : LDLR knockout HeLa cell lysate
Lane 3 : HepG2 cell lysate
Lane 4 : A431 cell lysate

Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

Predicted band size: 95 kDa
Observed band size: 130,160 kDa

Anti-LDLR antibody [EP1553Y] (ab52818) staining at 1/1000 dilution, shown in green; Mouse anti-CANX [CANX/1543] (**ab238078**) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab52818 was shown to bind specifically to LDLR. A band was observed at 130/160 kDa in wild-type HeLa cell lysates with no signal observed at this size in LDLR knockout cell line **ab273838** (knockout cell lysate **ab273792**). To generate this image, wild-type and LDLR knockout HeLa cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.



Western blot - Anti-LDL Receptor antibody [EP1553Y] (ab52818)

All lanes : Anti-LDL Receptor antibody [EP1553Y] (ab52818) at 1/1000 dilution

Lane 1 : PC-3 (Human prostate adenocarcinoma epithelial cell) whole cell lysate
Lane 2 : LNCaP (Human prostate carcinoma epithelial cell) whole cell lysate
Lane 3 : Huh7 (Human hepatocellular carcinoma epithelial cell) whole cell lysate
Lane 4 : HepG2 (Human hepatocellular carcinoma epithelial cell) whole cell lysate
Lane 5 : HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate
Lane 6 : A431 (Human epidermoid carcinoma epithelial cell) whole cell lysate
Lane 7 : HEK-293 (Human embryonic kidney epithelial cell) whole cell lysate

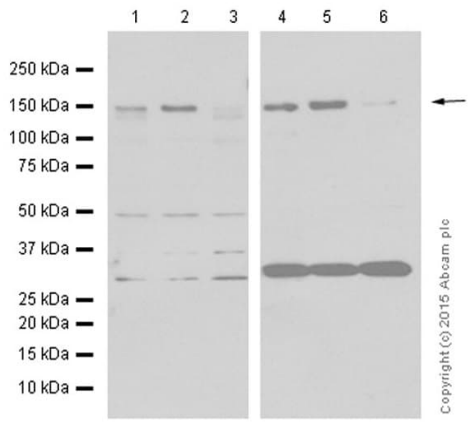
Lysates/proteins at 20 µg per lane.

Secondary
All lanes : Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/20000 dilution

Predicted band size: 95 kDa
Observed band size: 150 kDa

Blocking buffer: 5% NFDM/TBST

Diluting buffer: 5% NFDM/TBST



Western blot - Anti-LDL Receptor antibody [EP1553Y] (ab52818)

All lanes : Anti-LDL Receptor antibody [EP1553Y] (ab52818) at 1/1000 dilution

Lane 1 : HeLa (Human epithelial cell line from cervix adenocarcinoma) cell lysate
Lane 2 : HeLa treated with GW3965 for 8 hours at the final concentration of 5uM whole cell lysates
Lane 3 : HeLa treated with GW3965 for 24 hours at the final concentration of 5uM whole cell lysates
Lane 4 : Raw264.7 (Mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysates
Lane 5 : Raw264.7 treated with GW3965 for 8 hours at the final concentration of 5uM whole cell lysates
Lane 6 : Raw264.7 treated with GW3965 for 24 hours at the final concentration of 5uM whole cell lysates

Lysates/proteins at 20 µg per lane.

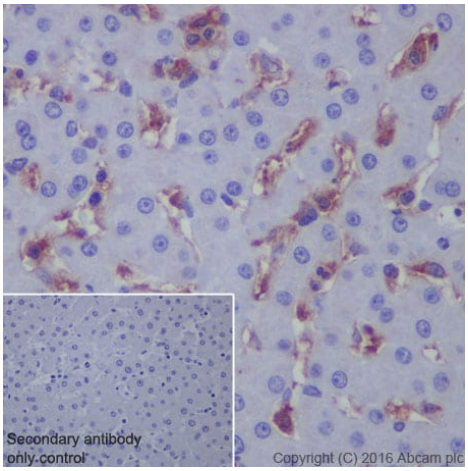
Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/20000 dilution (HRP goat anti-rabbit IgG (H+L))

Predicted band size: 95 kDa
Observed band size: 140 kDa

Exposure time: 1 minute

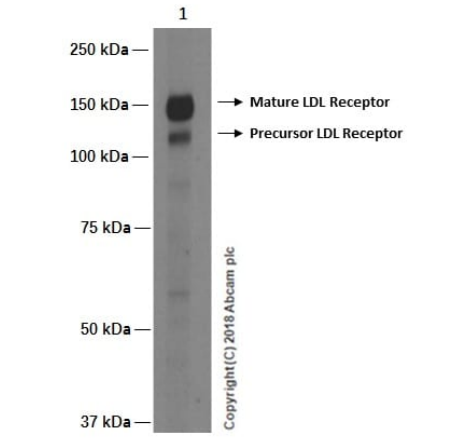
Blocking buffer: 5% NFDM/TBST

Diltuion buffer: 5% NFDM/TBST



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LDL Receptor antibody [EP1553Y] (ab52818)

Immunohistochemical analysis of paraffin-embedded human liver sections labeling LDL Receptor with purified ab52818 at dilution of 1:500. The secondary antibody used was **ab97051**; a goat anti-rabbit IgG H&L (HRP) at dilution of 1/500. The sample was counterstained with hematoxylin. Antigen retrieval was performed using EDTA Buffer; pH 9.0. PBS was used instead of the primary antibody as the negative control and is shown in the inset.



Western blot - Anti-LDL Receptor antibody [EP1553Y] (ab52818)

Anti-LDL Receptor antibody [EP1553Y] (ab52818) at 0.4 µg/ml + HepG2 (Human hepatocellular carcinoma epithelial cell) whole cell lysate at 20 µg

Secondary

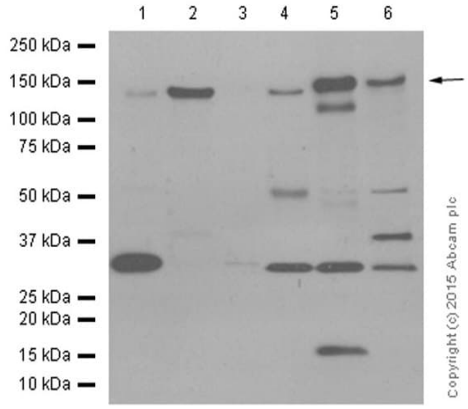
Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/20000 dilution

Predicted band size: 95 kDa

Exposure time: 3 minutes

Blocking and diluting buffer: 5% NFDM/TBST.

The molecular weight observed is consistent with the literature (PMID: 15199428, PMID: 8349823, PMID: 10906332, PMID: 24918045).



Western blot - Anti-LDL Receptor antibody [EP1553Y] (ab52818)

All lanes : Anti-LDL Receptor antibody [EP1553Y] (ab52818) at 1/1000 dilution

Lane 1 : Mouse liver lysate
Lane 2 : Mouse lung lysate
Lane 3 : Mouse colon lysate
Lane 4 : Human liver lysate
Lane 5 : HepG2 (Human liver hepatocellular carcinoma cell line) cell lysate
Lane 6 : HeLa (Human epithelial cell line from cervix adenocarcinoma) cell lysate

Lysates/proteins at 20 µg per lane.

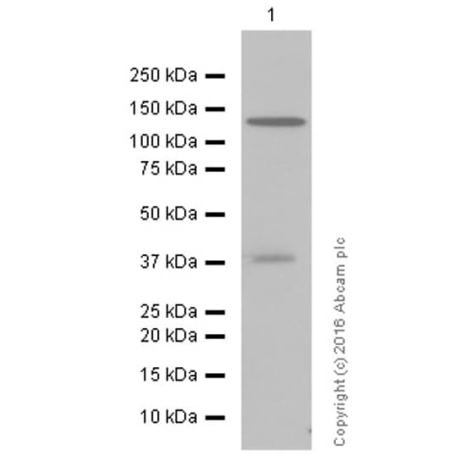
Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/1000 dilution (HRP goat anti-rabbit IgG (H+L))

Predicted band size: 95 kDa
Observed band size: 140 kDa

Exposure time: 3 minutes

Blocking buffer: 5% NFDM/TBST

Diltuion buffer: 5% NFDM/TBST



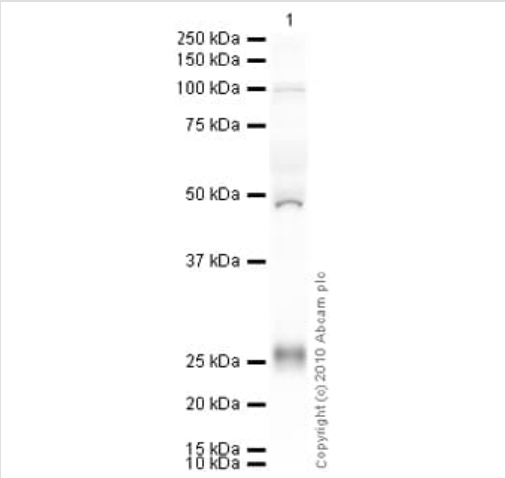
Western blot - Anti-LDL Receptor antibody [EP1553Y] (ab52818)

Anti-LDL Receptor antibody [EP1553Y] (ab52818) at 1/5000 dilution + Mouse liver at 15 µg

Secondary
Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**)

Predicted band size: 95 kDa
Observed band size: 140 kDa

Blocking/Diluting buffer 5% NFDM/TBST



Western blot - Anti-LDL Receptor antibody [EP1553Y] (ab52818)

Anti-LDL Receptor antibody [EP1553Y] (ab52818) at 1/500 dilution + Human plasma total protein lysate at 10 µg

Secondary

Goat Anti-Rabbit IgG H&L (HRP) preadsorbed (**ab97080**) at 1/5000 dilution

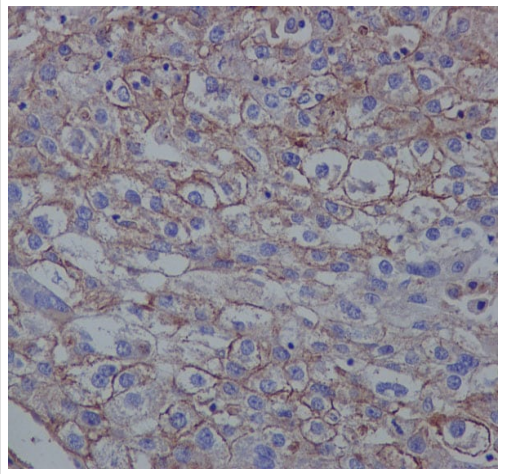
Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 95 kDa
Observed band size: 100 kDa
Additional bands at: 27 kDa, 48 kDa. We are unsure as to the identity of these extra bands.

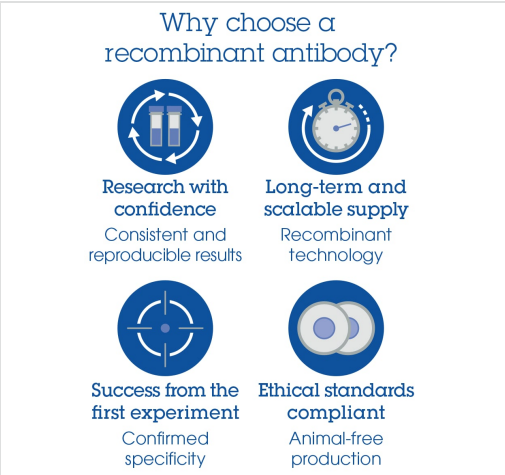
Exposure time: 4 minutes

LDL Receptor contains a number of potential glycosylation sites (SwissProt) which may explain its migration at a higher molecular weight than predicted.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LDL Receptor antibody [EP1553Y] (ab52818)

Immunohistochemical analysis of paraffin-embedded human hepatocellular carcinoma tissue labeling LDL Receptor with ab52818 at 1/100 dilution followed by goat anti-rabbit IgG H&L (HRP) (**ab97051**, 1/500). The sample was counterstained with hematoxylin.



Anti-LDL Receptor antibody [EP1553Y] (ab52818)

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