abcam

Product datasheet

Anti-LRP6 antibody [EPR2423(2)] ab134146

KO VALIDATED Recombinant RabMAb

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Overview

Product name	Anti-LRP6 antibody [EPR2423(2)]
Description	Rabbit monoclonal [EPR2423(2)] to LRP6
Host species	Rabbit
Tested applications	**Suitable for:** WB **Unsuitable for:** Flow Cyt,ICC/IF,IHC-P or IP
Species reactivity	**Reacts with:** Human **Predicted to work with:** Mouse, Rat
Immunogen	Synthetic peptide within Human LRP6 aa 1500-1600. The exact sequence is proprietary.
Positive control	WB: HAP1, HeLa, HepG2, 293T, and Jurkat whole cell lysate (ab7899).
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. **We are constantly working hard to ensure we provide our customers with best in class antibodies. As a result of this work we are pleased to now offer this antibody in purified format. We are in the process of updating our datasheets. The purified format is designated 'PUR' on our product labels. If you have any questions regarding this update, please contact our Scientific Support team.**

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid repeated freeze / thaw cycles.
Storage buffer	pH: 7.2 Preservative: 0.01% Sodium azide Constituents: 59% PBS, 40% Glycerol (glycerin, glycerine), 0.5% BSA

Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR2423(2)
Isotype	IgG

Applications

The Abpromise guarantee Our Abpromise guarantee covers the use of ab134146 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
WB	★★★★☆ (3)	1/1000 - 1/10000. Predicted molecular weight: 180 kDa.

Application notes Is unsuitable for Flow Cyt,ICC/IF,IHC-P or IP.

Target

Function Component of the Wnt-Fzd-LRP5-LRP6 complex that triggers beta-catenin signaling through inducing aggregation of receptor-ligand complexes into ribosome-sized signalsomes. Cell-surface coreceptor of Wnt/beta-catenin signaling, which plays a pivotal role in bone formation. The Wnt-induced Fzd/LRP6 coreceptor complex recruits DVL1 polymers to the plasma membrane which, in turn, recruits the AXIN1/GSK3B-complex to the cell surface promoting the formation of signalsomes and inhibiting AXIN1/GSK3-mediated phosphorylation and destruction of beta-catenin. Required for posterior patterning of the epiblast during gastrulation.

Tissue specificity Widely co-expressed with LRP5 during embryogenesis and in adult tissues.

Involvement in disease Defects in LRP6 are the cause of autosomal dominant coronary artery disease type 2 (ADCAD2) [MIM:610947].

Sequence similarities Belongs to the LDLR family.
Contains 4 EGF-like domains.
Contains 3 LDL-receptor class A domains.
Contains 20 LDL-receptor class B repeats.

Domain The YWTD-EGF-like domains 1 and 2 are required for the interaction with Wnt-frizzled complex.
The YWTD-EGF-like domains 3 and 4 are required for the interaction with DKK1.
The PPPSP motifs play a central role in signal transduction by being phosphorylated, leading to activate the Wnt signaling pathway.

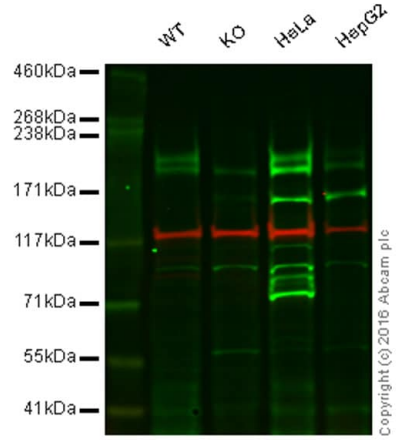
Post-translational modifications Dual phosphorylation of cytoplasmic PPPSP motifs sequentially by GSK3 and CK1 is required for AXIN1-binding, and subsequent stabilization and activation of beta-catenin via preventing GSK3-mediated phosphorylation of beta-catenin. Phosphorylated, in vitro, by GRK5/6 within and outside the PPPSP motifs. Phosphorylation at Ser-1490 by CDK14 during G2/M phase leads to regulation of the Wnt signaling pathway during the cell cycle. Phosphorylation by GSK3B is induced by RPSO1 binding and inhibited by DKK1. Phosphorylated, in vitro, by casein kinase I on Thr-1479.
Undergoes gamma-secretase-dependent regulated intramembrane proteolysis (RIP). The extracellular domain is first released by shedding, and then, through the action of gamma-secretase, the intracellular domain (ICD) is released into the cytoplasm where it is free to bind to GSK3B and to activate canonical Wnt signaling.

Palmitoylation on the two sites near the transmembrane domain leads to release of LRP6 from the endoplasmic reticulum.
Mono-ubiquitinated which retains LRP6 in the endoplasmic reticulum.
N-glycosylation is required for cell surface location.

Cellular localization

Membrane. Endoplasmic reticulum. On Wnt signaling, undergoes a cycle of caveolin- or clathrin-mediated endocytosis and plasma membrane location. Released from the endoplasmic reticulum on palmitoylation. Mono-ubiquitination retains it in the endoplasmic reticulum in the absence of palmitoylation. On Wnt signaling, phosphorylated, aggregates and colocalizes with AXIN1 and GSK3B at the plasma membrane in LRP6-signalsomes. Chaperoned to the plasma membrane by MESD.

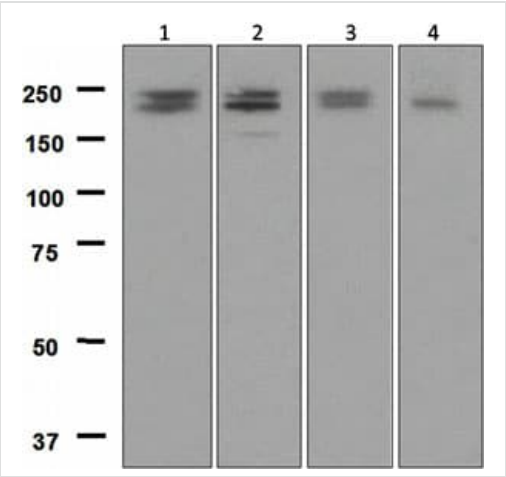
Images



Western blot - Anti-LRP6 antibody [EPR2423(2)] (ab134146)

Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: LRP6 knockout HAP1 cell lysate (20 µg)
Lane 3: HeLa cell lysate (20 µg)
Lane 4: HepG2 cell lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab134146 observed at 220 kDa. Red - loading control, ab18058, observed at 124 kDa.

ab134146 was shown to recognize LRP6 when LRP6 knockout samples were used, along with additional cross-reactive bands. Wild-type and LRP6 knockout samples were subjected to SDS-PAGE. ab134146 and ab18058 (loading control to Vinculin) were diluted 1/10000 and 1/1000 respectively, and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1/10000 dilution for 1 hour at room temperature before imaging.



Western blot - Anti-LRP6 antibody [EPR2423(2)] (ab134146)

All lanes : Anti-LRP6 antibody [EPR2423(2)] (ab134146) at 1/1000 dilution

Lane 1 : HeLa cell lysates

Lane 2 : HepG2 cell lysates

Lane 3 : 293T cell lysates

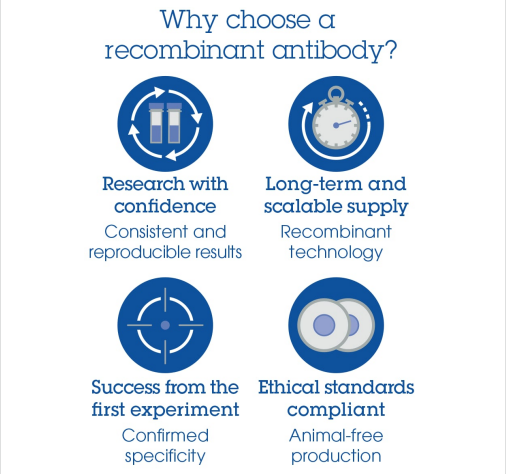
Lane 4 : Jurkat cell lysates

Lysates/proteins at 10 µg per lane.

Secondary

All lanes : HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 180 kDa



Anti-LRP6 antibody [EPR2423(2)] (ab134146)

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