CELL APPLICATIONS, INC.

LRP1 Antibody

Cat. No. CG1292

Applications:	**WB, ICC, IF**
Detected MW:	**500 kDa**
Species & Reactivity:	**Human, Mouse, Rat**
Isotype:	**Rabbit IgG**

BACKGROUND

LRP1 (Low-density Lipoprotein Receptor-Related Protein 1) is a multifunctional endocytic receptor of heterodimer of an 85-kDa membrane-bound carboxyl subunit and a non-covalently attached 515-kDa amino-terminal subunit, which binds and internalizes a broad range of biologically diverse ligands including proteins important in lipoprotein metabolism. LRP1 mediates the endocytotic internalization of dietary lipids carried in postprandial chylomicron remnants into hepatocytes by binding to Apolipoprotein E (ApoE), particle–bound lipoprotein lipase (LPL) and hepatic lipase. Interestingly, LRP1 is expressed in adipocytes and many other tissues and insulin stimulation of LRP1 increases the endocytic uptake of triglycerides and cholesteryl esters from remnant lipoproteins in postprandial adipocytes in a synergistic action with lipoprotein lipase.[1] Adipose-specific LRP1-knockout mice generated by crossing LRP1$^{flox/flox}$ mice with *aP2-Cre* transgenic mice recently revealed its prominent role in lipid assimilation affecting energy metabolism and diet-induced obesity in mature adipocyte. The fundamental function of LRP1 in lipid homeostasis was recently revealed in mouse model. It was shown that LRP1 expression is necessary for adipocyte differentiation. Silencing of LRP1 in preadipocytes by the use of siRNAs significantly inhibits the expression of PPARgamma, HSL and aP2 adipocyte differentiation markers, and leads to lipid-depleted cells inept to induce lipolysis. Moreover, LRP1 expression is up-regulated in obese human tissue, and suggests that this receptor may be an interesting therapeutic target in obesity.[2]

In addition to its role in lipid homeostasis, LRP1 participates many other regulation processes including intracellular signaling, clearance of apoptotic cells, degradation of proteases, activation of lysosomal enzymes, integrin maturation and recycling, focal adhesion disassembly, and cellular entry of bacterial toxins and viruses. Moreover, LRP1 binds a large number of cytoplasmic adaptor proteins via mortifs located on its cytoplasmic domain in a phosphorylation-specific manner, and can associate with and modulate the activity of other transmembrane receptors such as integrins and receptor tyrosine kinases.[3] It is required for early embryonic development. Moreover, it is necessary for the alpha 2-macroglobulin-mediated clearance of secreted amyloid precursor protein and beta-amyloid, the main component of amyloid plaques found in Alzheimer patients.[4] Expression of LRP1 decreases with age and has been found to be lower than controls in brain tissue from Alzheimer patients.

References:

1. Lillis, A.P. et al: Physiol. Rev. 88:887-918, 2008
2. Masson, O. et al: PLoS ONE 4:e7422, 2009
3. Lillis AP. et al: J. Thromb. Haemost. 3:1884-93, 2005
4. Bian, L. et al: Biol Psychiatry. 58:731-7, 2005

TECHNICAL INFORMATION

Source:
LRP1 antibody is a rabbit antibody raised against a short peptide from human LRP1 sequence.

Specificity and Sensitivity:
This antibody detects endogenous proteins without cross-reactivity with other family members.

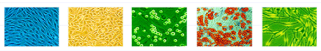
Storage Buffer: Solution in 0.01 M phosphate buffered saline pH 7.4, containing 15 mM sodium azide.

Storage:
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1-2 ug/mL (U87 extract)
IP	n/d
IHC	n/d
ICC	2-5 ug/mL
FACS	n/d
IF	2-5 ug/mL

*****Optimal dilutions must be determined by end user.*



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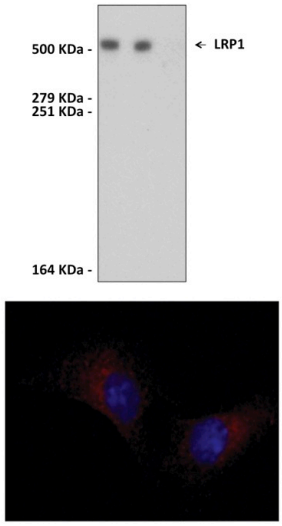
QUALITY CONTROL DATA



Top: Whole extract of U-87 cells was separated on SDS-PAGE and probed with Rabbit Anti-LRP1 (N-terminal). The antibody was developed using Goat Anti-Rabbit IgG-Peroxidase and a chemiluminescent substrate. Lanes: 1.) 1 µg/mL antibody 2.) 2 µg/mL antibody 3.) 2 µg/mL + LRP1 immunizing peptide (human,188-201)
Bottom: NRK cells were fixed and permeabilized with 4% paraformaldehyde followed by 0.5% Triton X-100. Fixed cells were stained with 5 µg/mL Rabbit Anti-LRP1 (N-terminal).The antibody was developed using Goat Anti-Rabbit IgG, Cy3 conjugate. Cells were counterstained with DAPI (blue) to stain nuclei.