

LRP1 (5A6): sc-57351

BACKGROUND

Members of the LDL receptor gene family, including LDLR (low density lipoprotein receptor), LEP1 (low density lipoprotein related protein), Megalin (also designated GP330), VLDLR (very low density lipoprotein receptor) and apoER2, are characterized by a cluster of cysteine-rich class A repeats, epidermal growth factor (EGF)-like repeats, YWTD repeats and an O-linked sugar domain. LRP1, also designated LRP and α -2-Macroglobulin receptor, is an endocytic receptor that mediates the uptake of at least 15 ligands, including α -2-Macroglobulin and apoE. LRP1 is cleaved into a membrane subunit and an extracellular subunit, which remain non-covalently associated. Proper folding and trafficking of LRP1 is facilitated by the receptor-associated protein (RAP), a molecular chaperone. The uptake of all known ligands through LRP1 can be blocked by RAP, which induces a conformational change in the receptor that renders it unable to bind ligands. LRP1, which is expressed in brain, liver and lung, is also implicated in Alzheimer's disease (AD), as the human LRP gene localizes to a potential AD locus on chromosome 12q13.3.

REFERENCES

1. Vash, B., et al. 1998. Three complement-type repeats of the low-density lipoprotein receptor-related protein define a common binding site for RAP, PAI-1, and lactoferrin. *Blood* 92: 3277-3285.
2. Trommsdorff, M., et al. 1999. Reeler/Disabled-like disruption of neuronal migration in knockout mice lacking the VLDL receptor and apoE receptor 2. *Cell* 97: 689-701.

CHROMOSOMAL LOCATION

Genetic locus: LRP1 (human) mapping to 12q13.3; Lrp1 (mouse) mapping to 10 D3.

SOURCE

LRP1 (5A6) is a mouse monoclonal antibody raised against full length native LRP1 of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

LRP1 (5A6) is recommended for detection of 85 kDa cleaved fragment of Low Density LRP1 of mouse, rat and human origin by Western Blotting (non-reducing) (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 μ g per 1 x 10⁶ cells).

Suitable for use as control antibody for LRP1 siRNA (h): sc-40101, LRP1 siRNA (m): sc-40102, LRP1 shRNA Plasmid (h): sc-40101-SH, LRP1 shRNA Plasmid (m): sc-40102-SH, LRP1 shRNA (h) Lentiviral Particles: sc-40101-V and LRP1 shRNA (m) Lentiviral Particles: sc-40102-V.

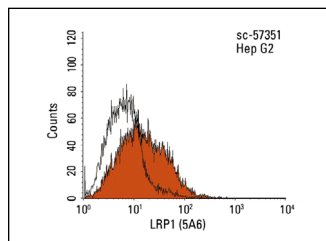
Molecular Weight of LRP1: 85/515/600 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



LRP1 (5A6): sc-57351. Indirect FCM analysis of Hep G2 cells stained with LRP1 (5A6), followed by PE-conjugated goat anti-mouse IgG: sc-3738. Black line histogram represents the isotype control, normal mouse IgG_{2b}: sc-3879.

SELECT PRODUCT CITATIONS

1. Hong, H., et al. 2009. Downregulation of LRP1 [correction of LPR1] at the blood-brain barrier in streptozotocin-induced diabetic mice. *Neuropharmacology* 56: 1054-1059.
2. Jiao, Y. and Liu, W. 2010. Low-density lipoprotein receptor-related protein 1 is an essential receptor for trichostanthin in 2 choriocarcinoma cell lines. *Biochem. Biophys. Res. Commun.* 391: 1579-1584.
3. Löffler, T., et al. 2016. Decreased plasma A β in hyperlipidemic APPSL transgenic mice is associated with BBB dysfunction. *Front. Neurosci.* 10: 232.
4. Vellonen, K.S., et al. 2017. Disease-induced alterations in brain drug transporters in animal models of Alzheimer's disease. *Pharm. Res.* 34: 2652-2662.
5. Mancinelli, R., et al. 2018. Role of lactoferrin and its receptors on biliary epithelium. *Biomaterials* 31: 369-379.
6. Versele, R., et al. 2020. Ketone bodies promote Amyloid- β ₁₋₄₀ clearance in a human *in vitro* blood-brain barrier model. *Int. J. Mol. Sci.* 21: 934.
7. Hsu, H.W., et al. 2021. Inflammatory cytokine IL-1 β downregulates endothelial LRP1 via microRNA-mediated gene silencing. *Neuroscience* 453: 69-80.
8. Wan, T., et al. 2022. Astrocytic phagocytosis contributes to demyelination after focal cortical ischemia in mice. *Nat. Commun.* 13: 1134.
9. Verma, N., et al. 2023. A β efflux impairment and inflammation linked to cerebrovascular accumulation of amyloid-forming amylin secreted from pancreas. *Commun. Biol.* 6: 2.

RESEARCH USE

For research use only, not for use in diagnostic procedures.