



# LRP1 (8G1): sc-57353

## 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  $\alpha$ -2-Macroglobulin receptor, is an endocytic receptor that mediates the uptake of at least 15 ligands, including  $\alpha$ -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

- 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.
- 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 (8G1) is a mouse monoclonal antibody raised against full length native LRP1 of human origin with an extracellular epitope mapping to the 515 kDa  $\alpha$  chain of LRP1.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

LRP1 (8G1) is recommended for detection of LRP1 of mouse, rat and human origin by Western Blotting (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  $\mu$ g per 1 x 10<sup>6</sup> 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.

## STORAGE

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

## SELECT PRODUCT CITATION

- Meng, H., et al. 2009. Localization of blood proteins thrombospondin 1 and ADAMTS13 to cerebral corpora amylacea. *Neuropathology* 29: 664-671.
- Dafnis, I., et al. 2010. An apolipoprotein E4 fragment can promote intracellular accumulation of amyloid peptide  $\beta$  42. *J. Neurochem.* 115: 873-884.
- Meng, H., et al. 2011. Stromal LRP1 in lung adenocarcinoma predicts clinical outcome. *Clin. Cancer Res.* 17: 2426-2433.
- Yahiro, K., et al. 2012. Low-density lipoprotein receptor-related protein-1 (LRP1) mediates autophagy and apoptosis caused by *Helicobacter pylori* VacA. *J. Biol. Chem.* 287: 31104-31115.
- Fernandez-Castaneda, A., et al. 2013. Identification of the low density lipoprotein (LDL) receptor-related protein-1 interactome in central nervous system myelin suggests a role in the clearance of necrotic cell debris. *J. Biol. Chem.* 288: 4538-4548.
- Dafnis, I., et al. 2018. apoE isoforms and carboxyl-terminal-truncated apoE4 forms affect neuronal BACE1 levels and A $\beta$  production independently of their cholesterol efflux capacity. *Biochem. J.* 475: 1839-1859.
- Fan, Y.G., et al. 2019. Paricalcitol accelerates BACE1 lysosomal degradation and inhibits calpain-1 dependent neuronal loss in APP/PS1 transgenic mice. *EBioMedicine* 45: 393-407.
- Laberge, A., et al. 2019.  $\alpha$ -2-Macroglobulin induces the shedding of microvesicles from cutaneous wound myofibroblasts. *J. Cell. Physiol.* 234: 11369-11379.
- Zou, C., et al. 2020. Reduction of mNAT1/hNAT2 contributes to cerebral endothelial necroptosis and A $\beta$  accumulation in Alzheimer's disease. *Cell Rep.* 33: 108447.
- Jin, M., et al. 2021. Tau activates microglia via the PQBP1-cGAS-STING pathway to promote brain inflammation. *Nat. Commun.* 12: 6565.
- Schwarz, M.M., et al. 2022. Oropouche orthobunyavirus infection is mediated by the cellular host factor LRP1. *Proc. Natl. Acad. Sci. USA* 119: e2204706119.
- Deng, W., et al. 2022. Effects of cerebral amyloid angiopathy on the brain vasculome. *Aging Cell* 21: e13503.
- Fukawa, M., et al. 2023. Extracellular HSPA5 is autocrinally involved in the regulation of neuronal process elongation. *Biochem. Biophys. Res. Commun.* 664: 50-58.

## RESEARCH USE

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