SANTA CRUZ BIOTECHNOLOGY, INC.

megalin (C-19): sc-16476

BACKGROUND

Members of the LDL receptor gene family, including LDLR (low density lipoprotein receptor), LRP (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. Megalin is a 600 kDa protein that is expressed on the apical membrane domain of epithelial cells, including proximal kidney tubules, intestine and ependymal cells. Proper folding and trafficking of megalin is facilitated by the receptor-associated protein (RAP), a molecular chaperone that can block the uptake of all known ligands for megalin. Specifically, megalin mediates the uptake of apolipoprotein J (apoJ, also designated Clusterin), which is a binding protein for the β-Amyloid peptide, a peptide implicated in Alzheimer's disease. Megalin is also an antigenic determinant for Heymann nephritis in rats and may be important in the re-absorption of several molecules, including vitamin B12, in the kidney.

REFERENCES

1. Kounnas, M.Z., et al. 1995. Identification of glycoprotein 330 as an endocytic receptor for apolipoprotein J/clusterin. J. Biol. Chem. 270: 13070-13075.
2. Hammad, S.M., et al. 1997. Interaction of apolipoprotein J-β-Amyloid-peptide complex with low density lipoprotein receptor-related protein-2/megalin. A mechanism to prevent pathological accumulation of β-Amyloid-peptide. J. Biol. Chem. 272: 18644-18649.
3. Gliemann, J. 1998. Receptors of the low density lipoprotein (LDL) receptor family in man. Multiple functions of the large family members via interaction with complex ligands. Biol. Chem. 379: 951-964.
4. 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.
5. Mikhailenko, I., et al. 1999. Functional domains of the very low density lipoprotein receptor: molecular analysis of ligand binding and acid-dependent ligand dissociation mechanisms. J. Cell. Sci. 112: 3269-3281.
6. Bu, G., et al. 2000. Role of rap in the biogenesis of lipoprotein receptors. Trends Cardiovasc. Med. 10: 148-155.

CHROMOSOMAL LOCATION

Genetic locus: LRP2 (human) mapping to 2q31.1.

SOURCE

megalin (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of megalin of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16476 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

megalin (C-19) is recommended for detection of megalin of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for megalin siRNA (h): sc-40103, megalin shRNA Plasmid (h): sc-40103-SH and megalin shRNA (h) Lentiviral Particles: sc-40103-V.

Molecular Weight of megalin: 600 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Kuusniemi, A.M., et al. 2005. Kidneys with heavy proteinuria show fibrosis, inflammation, and oxidative stress, but no tubular phenotypic change. Kidney Int. 68: 121-132.
2. Li, M., et al. 2008. Silencing megalin and cubilin genes inhibits myeloma light chain endocytosis and ameliorates toxicity in human renal proximal tubule epithelial cells. Am. J. Physiol. Renal Physiol. 295: F82-F90.
3. Iwao, Y., et al. 2008. CD36 is one of important receptors promoting renal tubular injury by advanced oxidation protein products. Am. J. Physiol. Renal Physiol. 295: F1871-F1880.
4. Need, E.F., et al. 2009. Serum testosterone bioassay evaluation in a large male cohort. Clin. Endocrinol. E-Published.

STORAGE

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

RESEARCH USE

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