SANTA CRUZ BIOTECHNOLOGY, INC.

cubilin (Y-20): sc-20607

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cubilin is an endocytic receptor that lacks a classical transmembrane region. It is a multidomain receptor that contains an amino terminal 110 residue segment followed by 8 epidermal growth factor (EGF)-like repeats and a contiguous stretch of 27 CUB domains. The gene encoding human cubulin maps to chromosome 10 and is predominantly expressed as a 460 kDa protein in intestine, kidney and yolk sac. It also is expressed as a 230 kDa form in intestinal membranes. Cubilin co-localizes with and binds to Megalin, a 600 kDa member of the LDL receptor family that is required for the internalization of cubulin-bound ligands, such as vitamin B12, apolipoprotein A1 and Albumin. Megalin specifically binds to cubilin in the amino terminal region that contains the EGF-like repeats and CUB domains 1 and 2. Mutations in the cubulin gene are thought to cause megaloblastic anemia 1 (MGA1), an autosomal recessive disorder also known as Imerslund-Grasbeck's disease, which causes intestinal malabsorption of vitamin B12.

REFERENCES

1. Kozyraki, R., et al. 1998. The human intrinsic factor-vitamin B12 receptor, cubilin: molecular characterization and chromosomal mapping of the gene to 10p within the autosomal recessive megaloblastic anemia (MGA1) region. Blood 91: 3593-3600.
2. Aminoff, M., et al. 1999. Mutations in CUBN, encoding the intrinsic factor-vitamin B12 receptor, cubilin, cause hereditary megaloblastic anemia 1. Nat. Genet. 21: 309-313.
3. Kristiansen, M., et al. 2000. Cubilin P1297L mutation associated with hereditary megaloblastic anemia 1 causes impaired recognition of intrinsic factor-vitamin B12 by cubilin. Blood 96: 405-409.
4. Kozyraki, R., et al. 2001. Megalin-dependent cubilin-mediated endocytosis is a major pathway for the apical uptake of transferrin in polarized epithelia. Proc. Natl. Acad. Sci. USA 98: 12491-12496.
5. Yammani, R.R., et al. 2001. Cubulin and Megalin expression and their interaction in the rat intestine: effect of thyroidectomy. Am. J. Physiol. Endocrinol. Metab. 281: 900-907.
6. Kozyraki, R. 2001. Cubulin, a multifunctional epithelial receptor: an overview. J. Mol. Med. 79: 161-167.
7. Nykjaer, A., et al. 2001. Cubilin dysfunction causes abnormal metabolism of the steroid hormone 25OH vitamin D3. Proc. Natl. Acad. Sci. USA 98: 13895-13900.

CHROMOSOMAL LOCATION

Genetic locus: CUBN (human) mapping to 10p12.31; Cubn (mouse) mapping to 2 A1.

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.

SOURCE

cubilin (Y-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of cubilin 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-20607 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

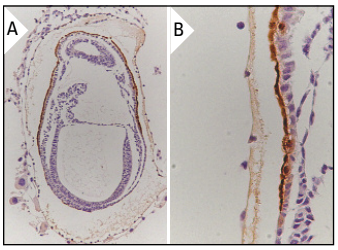
APPLICATIONS

cubilin (Y-20) is recommended for detection of cubilin 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), immunohistochemistry (including paraffin-embedded sections) (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 cubilin siRNA (h): sc-40099, cubilin shRNA Plasmid (h): sc-40099-SH and cubilin shRNA (h) Lentiviral Particles: sc-40099-V.

Molecular Weight of cubilin: 460 kDa.

DATA



cubilin (Y-20): sc-20607. Immunoperoxidase staining of formalin fixed, paraffin-embedded 7.5 dpc mouse embryo tissue showing apical membrane staining of extraembryonic visceral endoderm at low (**A**) and high (**B**) magnification. Kindly provided by Janet K. Chang, Center for Developmental Genetics, Stony Brook University.

SELECT PRODUCT CITATIONS

1. Teng, J., et al. 2004. Different types of glomerulopathic light chains interact with mesangial cells using a common receptor but exhibit different intracellular trafficking patterns. Lab. Invest. 84: 440-451.
2. Tsaroucha, A.K., et al. 2008. Megalin and cubilin in the human gallbladder epithelium. Clin. Exp. Med. 8: 165-170.
3. Gerbe, F., et al. 2008. Dynamic expression of Lrp2 pathway members reveals progressive epithelial differentiation of primitive endoderm in mouse blastocyst. Dev. Biol. 313: 594-602.
4. 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.