SANTA CRUZ BIOTECHNOLOGY, INC.

cubilin (T-16): sc-23644

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 it is predominantly expressed in intestine, kidney and yolk sac. It also is expressed in intestinal membranes. Cubilin colocalizes with and binds to megalin, a 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, 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 hered-itary 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.

CHROMOSOMAL LOCATION

Genetic locus: CUBN (human) mapping to 10p13; Cubn (mouse) mapping to 2 A1.

SOURCE

Cubilin (T-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-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-23644 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

cubilin (T-16) is recommended for detection of cubilin of mouse, human and, to a lesser extent, rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

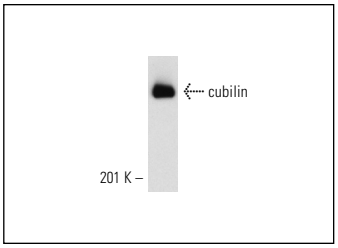
cubilin (T-16) is also recommended for detection of cubilin in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for cubilin siRNA (h): sc-40099, cubilin siRNA (m): sc-40100, cubilin shRNA Plasmid (h): sc-40099-SH, cubilin shRNA Plasmid (m): sc-40100-SH, cubilin shRNA (h) Lentiviral Particles: sc-40099-V and cubilin shRNA (m) Lentiviral Particles: sc-40100-V.

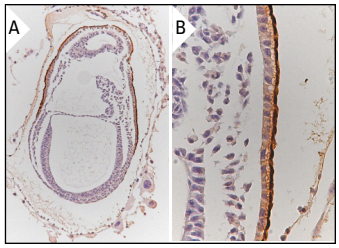
Molecular Weight of cubilin: 460 kDa.

Positive Controls: mouse kidney extract: sc-2255.

DATA



cubilin (T-16): sc-23644. Western blot analysis of cubilin expression in rat kidney tissue extract.



cubilin (T-16): sc-23644. 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. Smith, B.T., et al. 2006. Targeted disruption of cubilin reveals essential developmental roles in the structure and function of endoderm and in somite formation. BMC Dev. Biol. 6: 30.
2. Xiao, C., et al. 2008. Enhanced cellular uptake of remnant high-density lipoprotein particles: a mechanism for high-density lipoprotein lowering in Insulin resistance and hypertriglyceridemia. Circ. Res. 103: 159-166.
3. Lighthouse, J.K., et al. 2011. MESD is essential for apical localization of megalin/LRP2 in the visceral endoderm. Dev. Dyn. 240: 577-588.

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.