

cubilin (A-20): sc-20609

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 cubilin maps to chromosome 10 and it is predominantly expressed in intestine, kidney and yolk sac. It also is expressed in intestinal membranes. Cubilin co-localizes with and binds to megalin, a member of the LDL receptor family that is required for the internalization of cubilin-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 cubilin 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 anaemia 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 B(12) 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: E900-E907.
6. Kozyraki, R. 2001. Cubulin, a multifunctional epithelial receptor: an overview. *J. Mol. Med.* 79: 161-167.

CHROMOSOMAL LOCATION

Genetic locus: Cubn (mouse) mapping to 2 A1.

SOURCE

cubilin (A-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of cubilin of mouse origin.

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.

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-20609 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

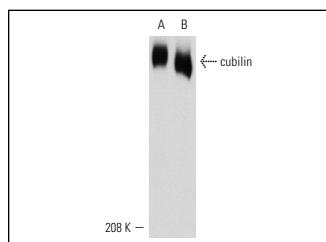
cubilin (A-20) is recommended for detection of cubilin of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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).

Suitable for use as control antibody for cubilin siRNA (m): sc-40100, cubilin siRNA (r): sc-108042, cubilin shRNA Plasmid (m): sc-40100-SH, cubilin shRNA Plasmid (r): sc-108042-SH, cubilin shRNA (m) Lentiviral Particles: sc-40100-V and cubilin shRNA (r) Lentiviral Particles: sc-108042-V.

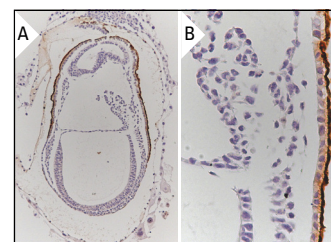
Molecular Weight of cubilin: 460 kDa.

Positive Controls: mouse kidney extract: sc-2255 or rat kidney extract: sc-2394.

DATA



cubilin (A-20): sc-20609. Western blot analysis of cubilin expression in rat (A) and mouse (B) kidney extracts.



cubilin (A-20): sc-20609. 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. Caratù, G., et al. 2007. Identification of the ligands of protein interaction domains through a functional approach. *Mol. Cell Proteomics* 6: 333-345.
2. Gressner, O.A., et al. 2008. Gc-globulin (vitamin D binding protein) is synthesized and secreted by hepatocytes and internalized by hepatic stellate cells through Ca²⁺-dependent interaction with the megalin/gp330 receptor. *Clin. Chim. Acta* 390: 28-37.
3. Cook, S.A., et al. 2009. A mouse model for Meckel syndrome type 3. *J. Am. Soc. Nephrol.* 20: 753-764.