

## cubilin (A-4): sc-518089



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 cubilin 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 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 Imlerslund-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 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 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. Cubilin 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. Cubilin, 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 25(OH) vitamin D<sub>3</sub>. *Proc. Natl. Acad. Sci. USA* 98: 13895-13900.

## CHROMOSOMAL LOCATION

Genetic locus: CUBN (human) mapping to 10p13.

## SOURCE

cubilin (A-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 51-73 near the N-terminus of cubilin of human origin.

## PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

cubilin (A-4) is recommended for detection of cubilin of human origin by Western Blotting (starting dilution 1:100, 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) 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.

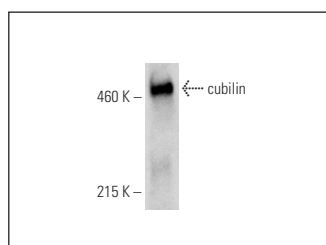
Molecular Weight of cubilin: 460 kDa.

Positive Controls: human kidney extract: sc-363764.

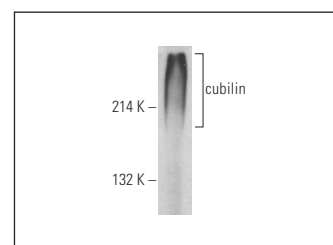
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



cubilin (A-4): sc-518089. Western blot analysis of cubilin expression in human kidney tissue extract. Detection reagent used: m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM.



cubilin (A-4): sc-518089. Western blot analysis of cubilin expression in mouse kidney tissue extract. Detection reagent used: m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM.

## SELECT PRODUCT CITATIONS

1. Kapetanaki, S., et al. 2022. TMAO suppresses megalin expression and albumin uptake in human proximal tubular cells via PI3K and ERK signaling. *Int. J. Mol. Sci.* 23: 8856.

## 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.