

# Barttin (A-3): sc-365161

## BACKGROUND

The BSND gene encodes Barttin, a protein comprised of two putative trans-membrane  $\alpha$  helices. Barttin expression is detected in the thin limb and thick ascending limb of the loop of Henle in the kidney, and in the dark cells of the inner ear. The BSND gene is mutated in Bartter syndrome, a genetic disease characterized by hypokalemia, metabolic alkalosis and normal to low blood pressure, which occurs with sensorineural deafness, irreversible hearing loss due to cochlear sensorineural or cochlear nerve damage. Barttin acts as an essential  $\beta$  subunit for CLCKNA and CLCKNB chloride channels, with which it co-localizes in basolateral membranes of renal tubules and of potassium-secreting epithelia of the inner ear. Mutations in either CLCKNB or Barttin compromise currents through heteromeric channels that can be stimulated further by mutating a proline-tyrosine (PY) motif on Barttin. Heteromers formed by chloride channels and Barttin are essential for renal salt reabsorption and potassium recycling in the inner ear.

## CHROMOSOMAL LOCATION

Genetic locus: BSND (human) mapping to 1p32.3; Bsnd (mouse) mapping to 4 C7.

## SOURCE

Barttin (A-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 89-117 near the N-terminus of Barttin of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365161 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## RESEARCH USE

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

## APPLICATIONS

Barttin (A-3) is recommended for detection of Barttin isoforms 1 and 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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 Barttin siRNA (h): sc-60245, Barttin siRNA (m): sc-60246, Barttin shRNA Plasmid (h): sc-60245-SH, Barttin shRNA Plasmid (m): sc-60246-SH, Barttin shRNA (h) Lentiviral Particles: sc-60245-V and Barttin shRNA (m) Lentiviral Particles: sc-60246-V.

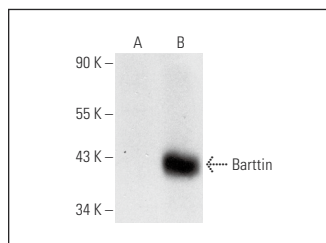
Molecular Weight of Barttin: 35 kDa.

Positive Controls: rat kidney extract: sc-2394 or Barttin (m): 293T Lysate: sc-125028.

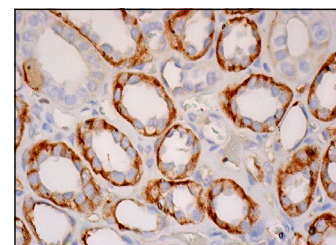
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



Barttin (A-3): sc-365161. Western blot analysis of Barttin expression in non-transfected: sc-117752 (A) and mouse Barttin transfected: sc-125028 (B) 293T whole cell lysates.



Barttin (A-3): sc-365161. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic and membrane staining of cells in tubules.

## SELECT PRODUCT CITATIONS

- Huguet, L., et al. 2018. High frequency and wide range of human kidney papillary crystalline plugs. *Urolithiasis* 46: 333-341.
- Lin, M.H., et al. 2021. Impairment in renal medulla development underlies salt wasting in Clc-k2 channel deficiency. *JCI Insight* 6: e151039.
- Garcia, H., et al. 2022. Agonists of prostaglandin E2 receptors as potential first in class treatment for nephronophthisis and related ciliopathies. *Proc. Natl. Acad. Sci. USA* 119: e2115960119.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.