SANTA CRUZ BIOTECHNOLOGY, INC.

# nephrocystin-2 (I-19): sc-8719

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Left-right asymmetry in vertebrates is essential for the development of lateral unpaired organs, including the heart, stomach and spleen, and is de-pendent on the differential expression of specific genes, which include nodal, lefty and nephrocystin-2. Nephrocystin-2, also known as inversin (INV), inversion of embryo turning homolog or NPHP2, is a 1,065 amino acid protein that exists as 3 alternatively spliced isoforms and is essential for estab-lishment of the left-right axis and normal renal development. Localizing to the cytoplasm, cytoskeleton, membrane and nucleus, nephrocystin-2 is ex-pressed during presomite-stage embryos and persists in adulthood, with high levels of expression in liver and kidney. Mice expressing nephrocystin-2 mutations are primarily generated by random insertional mutagenesis and result in the reversal of left/right polarity and cyst formation in the kidneys. Furthermore, altered nephrocystin-2 function reverses nodal and lefty expression, indicating that nephrocystin-2 signaling occurs upstream of these proteins involved in the development of asymmetry.

## REFERENCES


1. Lux, S.E., et al. 1990. Analysis of cDNA for human erythrocyte ankyrin indicates a repeated structure with homology to tissue-differentiation and cell-cycle control proteins. Nature 344: 36-42.
2. Yokoyama, T., et al. 1990. Conserved cysteine to serine mutation in tyrosinase is responsible for the classical albino mutation in laboratory mice. Nucleic Acids Res. 18: 7293-7298.
3. Yokoyama, T., et al. 1993. Reversal of left-right asymmetry: a situs inversus mutation. Science 260: 679-682.
4. Lowe, L.A., et al. 1996. Conserved left-right asymmetry of nodal expression and alterations in murine situs inversus. Nature 381: 158-161.
5. Morgan, D., et al. 1998. Inversin, a novel gene in the vertebrate left-right axis pathway, is partially deleted in the inv mouse. Nat. Genet. 20: 149-156.
6. Mochizuki, T., et al. 1998. Cloning of inv, a gene that controls left/right asymmetry and kidney development. Nature 395: 177-181.
7. Adachi, H., et al. 1999. Determination of left/right asymmetric expression of nodal by a left side-specific enhancer with sequence similarity to a lefty-2 enhancer. Genes Dev. 13: 1589-1600.


## CHROMOSOMAL LOCATION

Genetic locus: INVS (human) mapping to 9q31.1; Invs (mouse) mapping to 4 B1.

## SOURCE

nephrocystin-2 (I-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of nephrocystin-2 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.

## 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-8719 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

nephrocystin-2 (I-19) is recommended for detection of nephrocystin-2 of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

nephrocystin-2 (I-19) is also recommended for detection of nephrocystin-2 in additional species, including canine and bovine.

Suitable for use as control antibody for nephrocystin-2 siRNA (h): sc-106294, nephrocystin-2 siRNA (m): sc-149912, nephrocystin-2 shRNA Plasmid (h): sc-106294-SH, nephrocystin-2 shRNA Plasmid (m): sc-149912-SH, nephrocystin-2 shRNA (h) Lentiviral Particles: sc-106294-V and nephrocystin-2 shRNA (m) Lentiviral Particles: sc-149912-V.

Molecular Weight of nephrocystin-2 isoforms: 118/100/11 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS


1. Sugiyama, Y., et al. 2010. Secreted frizzled-related protein disrupts PCP in eye lens fiber cells that have polarised primary cilia. Dev. Biol. 338: 193-201.
2. Veland, I.R., et al. 2013. Inversin/Nephrocystin-2 is required for fibroblast polarity and directional cell migration. PLoS ONE 8: e60193.


## RESEARCH USE

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

## PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.