SANTA CRUZ BIOTECHNOLOGY, INC.

PCDP1 (N-16): sc-243760

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The Power to Question

BACKGROUND

PCDP1 (primary ciliary dyskinesia protein 1), also known as MGC33657, is an 840 amino acid protein essential for ciliary and flagellar biogenesis and motility that belongs to the PCDP1 family. Encoded by a gene that maps to human chromosome 2q14.2, PCDP1 is highly conserved in chimpanzee, bovine, chicken and zebrafish. PCDP1 exists as four alternatively spliced isoforms and interacts with calmodulin in the presence of calcium. PCDP1 is expressed in ciliated respiratory epithelial cells, brain ependymal cells and spermatogenic cells, and localizes to sperm flagella and the cilia of respiratory epithelial cells and brain ependymal cells. PCDP1 may directly or indirectly regulate dynein motor force and may be a vital structural component in flagella. Loss of PCDP1 is related to hydrocephalus, male infertility and respiratory ciliary dysfunction.

REFERENCES

1. Brunner, S., et al. 2008. Overexpression of RPGR leads to male infertility in mice due to defects in flagellar assembly. Biol. Reprod. 79: 608-617.
2. Lesch, K.P., et al. 2008. Molecular genetics of adult ADHD: converging evidence from genome-wide association and extended pedigree linkage studies. J. Neural Transm. 115: 1573-1585.
3. Lee, L., et al. 2008. Primary ciliary dyskinesia in mice lacking the novel ciliary protein Pcdp1. Mol. Cell. Biol. 28: 949-957.
4. Francis, R.J., et al. 2009. Initiation and maturation of cilia-generated flow in newborn and postnatal mouse airway. Am. J. Physiol. Lung Cell. Mol. Physiol. 296: L1067-L1075.
5. Wilson, G.R., et al. 2010. Deletion of the Parkin co-regulated gene causes defects in ependymal ciliary motility and hydrocephalus in the quakingviable mutant mouse. Hum. Mol. Genet. 19: 1593-1602.
6. DiPetrillo, C.G. et al. 2010. Pcdp1 is a central apparatus protein that binds Ca^{2+}-calmodulin and regulates ciliary motility. J. Cell Biol. 189: 601-612.
7. Vogel, P., et al. 2010. Tubulin tyrosine ligase-like 1 deficiency results in chronic rhinosinusitis and abnormal development of spermatid flagella in mice. Vet. Pathol. 47: 703-712.
8. SWISS-PROT/TrEMBL (Q4G0U5). World Wide Web URL: http://www.uniprot.org/uniprot/Q4G0U5

CHROMOSOMAL LOCATION

Genetic locus: PCDP1 (human) mapping to 2q14.2.

SOURCE

PCDP1 (N-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PCDP1 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-243760 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PCDP1 (N-16) is recommended for detection of PCDP1 of 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).

PCDP1 (N-16) is also recommended for detection of PCDP1 in additional species, including equine, canine and avian.

Suitable for use as control antibody for PCDP1 siRNA (h): sc-94272, PCDP1 shRNA Plasmid (h): sc-94272-SH and PCDP1 shRNA (h) Lentiviral Particles: sc-94272-V.

Molecular Weight of PCDP1: 97 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.

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.

PROTOCOLS

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