

Pilt (N-20): sc-243796

BACKGROUND

Pilt (protein incorporated later into tight junctions), also known as TJAP1 (tight junction associated protein 1 (peripheral)) or TJP4 (tight junction protein 4 (peripheral)), is a 557 amino acid phosphoprotein that contains an N-terminal coiled-coil domain and a central proline-rich region. Encoded by a gene that maps to human chromosome 6p21.1, Pilt shares 74% amino acid identity with its mouse homolog and exists as four alternatively spliced isoforms. Ubiquitously expressed, Pilt localizes to Golgi apparatus and may function in vesicle trafficking. Pilt interacts with SAP 97 and also binds PSD-93. Although Pilt is recruited to tight junctions (TJ) during late stages of TJ complex maturation, it is excluded from apical junctions and desmosomes. Pilt may function as a heart-rhythm-determinant (HRD) gene that plays a role in sex-dependent organizational principles of the heart-rhythm transcriptome.

REFERENCES

1. Kawabe, H., Nakanishi, H., Asada, M., Fukuhara, A., Morimoto, K., Takeuchi, M. and Takai, Y. 2001. Pilt, a novel peripheral membrane protein at tight junctions in epithelial cells. *J. Biol. Chem.* 276: 48350-48355.
2. Yuen, T., Ruf, F., Chu, T. and Sealfon, S.C. 2009. Microtranscriptome regulation by gonadotropin-releasing hormone. *Mol. Cell. Endocrinol.* 302: 12-17.
3. Si, H., Banga, R.S., Kapitsinou, P., Ramaiah, M., Lawrence, J., Kambhampati, G., Gruenwald, A., Bottinger, E., Glicklich, D., Tellis, V., Greenstein, S., Thomas, D.B., Pullman, J., Fazzari, M. and Susztak, K. 2009. Human and murine kidneys show gender- and species-specific gene expression differences in response to injury. *PLoS ONE* 4: e4802.
4. Iacobas, D.A., Iacobas, S., Thomas, N. and Spray, D.C. 2010. Sex-dependent gene regulatory networks of the heart rhythm. *Funct. Integr. Genomics* 10: 73-86.
5. Wang, X.R., Zhang, X.M., Zhen, J., Zhang, P.X., Xu, G. and Jiang, H. 2010. MicroRNA expression in the embryonic mouse inner ear. *Neuroreport* 21: 611-617.
6. Knowlton, M.L., Selfors, L.M., Wrobel, C.N., Gu, T.L., Ballif, B.A., Gygi, S.P., Polakiewicz, R. and Brugge, J.S. 2010. Profiling Y561-dependent and -independent substrates of CSF-1R in epithelial cells. *PLoS ONE* 5: e13587.

CHROMOSOMAL LOCATION

Genetic locus: TJAP1 (human) mapping to 6p21.1; Tjap1 (mouse) mapping to 17 C.

SOURCE

Pilt (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Pilt 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-243796 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Pilt (N-20) is recommended for detection of Pilt 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).

Pilt (N-20) is also recommended for detection of Pilt in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Pilt siRNA (h): sc-95172, Pilt siRNA (m): sc-152265, Pilt shRNA Plasmid (h): sc-95172-SH, Pilt shRNA Plasmid (m): sc-152265-SH, Pilt shRNA (h) Lentiviral Particles: sc-95172-V and Pilt shRNA (m) Lentiviral Particles: sc-152265-V.

Molecular Weight of Pilt isoforms 1/2/3/4: 62/61/5/53 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.