FAT4 (P-17): sc-161577

SANTA CRUZ®
BIOTECHNOLOGY

The Power to Question

BACKGROUND

The cadherins represent a family of Ca^{2+}-dependent adhesion molecules that function to mediate cell to cell binding that is critical for the maintenance of structure and morphogenesis. Cadherins contain a large extracellular domain at the N-terminus, which is characterized by a series of five homologous repeats, the most distal of which is thought to be responsible for binding specificity. The relatively short C-terminal intracellular domain interacts with a variety of cytoplasmic proteins, including β-catenin, to regulate cadherin function. The cadherin superfamily includes cadherins, protocadherins, desmogleins and desmocollins. FAT4 (FAT tumor suppressor homolog 4), also known as FAT-J, CDHF14 or CDHR11, is a 4,981 amino acid single-pass type I membrane protein that belongs to the protocadherin subfamily of cadherins and localizes to the primary cilia of kidney. Widely expressed, FAT4 contains 34 cadherin domains, 6 EGF-like domains and 2 laminin G-like domains. FAT4 may function in the regulation of planar cell polarity.

REFERENCES

1. Sano, K., Tanihara, H., Heimark, R.L., Obata, S., Davidson, M., St. John, T., Taketani, S. and Suzuki, S. 1993. Protocadherins: a large family of cadherin-related molecules in central nervous system. EMBO J. 12: 2249-2256.

2. Wu, Q. and Maniatis, T. 1999. A striking organization of a large family of human neural cadherin-like cell adhesion genes. Cell 97: 779-790.

3. Suzuki, S.T. 2000. Recent progress in protocadherin research. Exp. Cell Res. 261: 13-18.

4. Hill, E., Broadbent, I.D., Chothia, C. and Pettitt, J. 2001. Cadherin super-family proteins in *Caenorhabditis elegans* and *Drosophila melanogaster*. J. Mol. Biol. 305: 1011-1024.

5. Wolverton, T. and Lalande, M. 2001. Identification and characterization of three members of a novel subclass of protocadherins. Genomics 76: 66-72.

6. Noonan, J.P., Grimwood, J., Schmutz, J., Dickson, M. and Myers, R.M. 2004. Gene conversion and the evolution of protocadherin gene cluster diversity. Genome Res. 14: 354-366.

7. Durand, C.M., Kappeler, C., Betancur, C., Delorme, R., Quach, H., Goubran-Botros, H., Melke, J., Nygren, G., Chabane, N., Bellivier, F., Szoke, A., Schurhoff, F., Rastam, M., Anckarsäter, H., Gillberg, C., Leboyer, M. and Bourgeron, T. 2006. Expression and genetic variability of PCDH11Y, a gene specific to *Homo sapiens* and candidate for susceptibility to psychiatric disorders. Am. J. Med. Genet. B Neuropsychiatr. Genet. 141: 67-70.

8. Hirayama, T. and Yagi, T. 2006. The role and expression of the protocadherin-α clusters in the CNS. Curr. Opin. Neurobiol. 16: 336-342.

9. Triana-Baltzer, G.B. and Blank, M. 2006. Cytoplasmic domain of protocadherin-α enhances homophilic interactions and recognizes cytoskeletal elements. J. Neurobiol. 66: 393-407.

CHROMOSOMAL LOCATION

Genetic locus: FAT4 (human) mapping to 4q28.1; Fat4 (mouse) mapping to 3 B.

RESEARCH USE

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

SOURCE

FAT4 (P-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of FAT4 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-161577 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

FAT4 (P-17) is recommended for detection of FAT4 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); non cross-reactive with other FAT family members.

FAT4 (P-17) is also recommended for detection of FAT4 in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for FAT4 siRNA (h): sc-88877, FAT4 siRNA (m): sc-145082, FAT4 shRNA Plasmid (h): sc-88877-SH, FAT4 shRNA Plasmid (m): sc-145082-SH, FAT4 shRNA (h) Lentiviral Particles: sc-88877-V and FAT4 shRNA (m) Lentiviral Particles: sc-145082-V.

Molecular Weight of FAT4: 543 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) Immunofluo-rescence: 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.

PROTOCOLS

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