

PCDH11X/Y (T-16): sc-84553

BACKGROUND

Protocadherins (PCDHs) are a subfamily of cadherins, a large group of related glycoproteins that mediate calcium-dependent cell-cell adhesion via a homophilic mechanism. Involved in a variety of functions, protocadherins help to regulate neural development and synapse formation. PCDH11X (protocadherin 11 X-linked), a 1,347 amino acid protein, and PCDH11Y (protocadherin 11 Y-linked), a 1,340 amino acid protein, are single-pass type I membrane proteins that each contain 7 cadherin domains and each exist as multiple alternatively spliced isoforms. Expressed strongly in both adult and fetal brain tissue, PCDH11X and PCDH11Y function as calcium-dependent cell adhesion proteins that are essential for the segmental development and function of the central nervous system. Variations in the PCDH11X and PCDH11Y genes are associated with an increased susceptibility to brain-related afflictions, such as late-onset Alzheimer's disease.

REFERENCES

1. Yoshida, K. and Sugano, S. 1999. Identification of a novel protocadherin gene (PCDH11) on the human XY homology region in Xq21.3. *Genomics* 62: 540-543.
2. Yagi, T. and Takeichi, M. 2000. Cadherin superfamily genes: functions, genomic organization, and neurologic diversity. *Genes Dev.* 14: 1169-1180.
3. Nollet, F., Kools, P. and van Roy, F. 2000. Phylogenetic analysis of the cadherin superfamily allows identification of six major subfamilies besides several solitary members. *J. Mol. Biol.* 299: 551-572.
4. Blanco, P., Sargent, C.A., Boucher, C.A., Mitchell, M. and Affara, N.A. 2000. Conservation of PCDHX in mammals; expression of human X/Y genes predominantly in brain. *Mamm. Genome* 11: 906-914.
5. Blanco-Arias, P., Sargent, C.A. and Affara, N.A. 2004. Protocadherin X (PCDHX) and Y (PCDHY) genes; multiple mRNA isoforms encoding variant signal peptides and cytoplasmic domains. *Mamm. Genome* 15: 41-52.
6. 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.* 141B: 67-70.
7. Wilson, N.D., Ross, L.J., Crow, T.J. and Volpi, E.V. 2006. PCDH11 is X/Y homologous in *Homo sapiens* but not in *Gorilla gorilla* and *Pan troglodytes*. *Cytogenet. Genome Res.* 114: 137-139.
8. Carrasquillo, M.M., Zou, F., Pankratz, V.S., Wilcox, S.L., Ma, L., Walker, L.P., Younkin, S.G., Younkin, C.S., Younkin, L.H., Bisceglia, G.D., Ertekin-Taner, N., Crook, J.E., Dickson, D.W., Petersen, R.C., Graff-Radford, N.R. and Younkin, S.G. 2009. Genetic variation in PCDH11X is associated with susceptibility to late-onset Alzheimer's disease. *Nat. Genet.* 41: 192-198.

CHROMOSOMAL LOCATION

Genetic locus: PCDH11X (human) mapping to Xq21.31, PCDH11Y (human) mapping to Yp11.2; Pcdh11x (mouse) mapping to X E2.

SOURCE

PCDH11X/Y (T-16) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of PCDH11Y of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-84553 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PCDH11X/Y (T-16) is recommended for detection of PCDH11X and PCDH11Y 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 PCDH11 isoforms.

PCDH11X/Y (T-16) is also recommended for detection of PCDH11X and PCDH11Y in additional species, including equine, bovine and porcine.

Molecular Weight of PCDH11X: 148 kDa.

Molecular Weight of PCDH11Y: 147 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (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.