

# TMEM178 (D-12): sc-132475

## BACKGROUND

Transmembrane protein 178 (TMEM 178) is a 297 amino acid protein that is localized to the membrane. TMEM178 is a multi-pass membrane protein with identified homologs in mouse, rat and *Xenopus*. Human TMEM178 contains a 25 amino acid signal peptide and a mature chain that spans amino acids 26 to 297. Two isoforms of TMEM178 exist as a result of alternative splicing events. TMEM178 is encoded by a gene that maps to chromosome 2. The second largest human chromosome, 2 consists of 237 million bases encoding over 1,400 genes and making up approximately 8% of the human genome. Interestingly, chromosome 2 contains what appears to be a vestigial second centromere and vestigial telomeres which gives credence to the hypothesis that human chromosome 2 is the result of an ancient fusion of two ancestral chromosomes seen in modern form today in apes.

## REFERENCES

1. Yamakawa, K., Mitchell, S., Hubert, R., Chen, X.N., Colbern, S., Huo, Y.K., Gadomski, C., Kim, U.J. and Korenberg, J.R. 1995. Isolation and characterization of a candidate gene for progressive myoclonus epilepsy on 21q22.3. *Hum. Mol. Genet.* 4: 709-716.
2. Lalioti, M.D., Chen, H., Rossier, C., Shafaatian, R., Reid, J.D. and Antonarakis, S.E. 1996. Cloning the cDNA of human PWP2, which encodes a protein with WD repeats and maps to 21q22.3. *Genomics* 35: 321-327.
3. Nagamine, K., Kudoh, J., Minoshima, S., Kawasaki, K., Asakawa, S., Ito, F. and Shimizu, N. 1997. Genomic organization and complete nucleotide sequence of the human PWP2 gene on chromosome 21. *Genomics* 42: 528-531.
4. Kudoh, J., Nagamine, K., Asakawa, S., Abe, I., Kawasaki, K., Maeda, H., Tsujimoto, S., Minoshima, S., Ito, F. and Shimizu, N. 1997. Localization of 16 exons to a 450-kb region involved in the autoimmune polyglandular disease type I (APECED) on human chromosome 21q22.3. *DNA Res.* 4: 45-52.
5. Nagamine, K., Kudoh, J., Kawasaki, K., Minoshima, S., Asakawa, S., Ito, F. and Shimizu, N. 1997. Genomic organization and complete nucleotide sequence of the TMEM1 gene on human chromosome 21q22.3. *Biochem. Biophys. Res. Commun.* 235: 185-190.
6. Lafrenière, R.G., Kibar, Z., Rochefort, D.L., Han, F.Y., Fon, E.A., Dube, M.P., Kang, X., Baird, S., Korneluk, R.G., Rommens, J.M. and Rouleau, G.A. 1997. Genomic structure of the human GT334 (EHOC-1) gene mapping to 21q22.3. *Gene* 198: 313-321.
7. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602103. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: TMEM178 (human) mapping to 2p22.1; Tmem178 (mouse) mapping to 17 E3.

## SOURCE

TMEM178 (D-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of TMEM178 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-132475 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

TMEM178 (D-12) is recommended for detection of TMEM178 isoforms 1 and 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); non cross-reactive with other TMEM family members.

TMEM178 (D-12) is also recommended for detection of TMEM178 isoforms 1 and 2 in additional species, including canine and bovine.

Suitable for use as control antibody for TMEM178 siRNA (h): sc-94578, TMEM178 siRNA (m): sc-154415, TMEM178 shRNA Plasmid (h): sc-94578-SH, TMEM178 shRNA Plasmid (m): sc-154415-SH, TMEM178 shRNA (h) Lentiviral Particles: sc-94578-V and TMEM178 shRNA (m) Lentiviral Particles: sc-154415-V.

Molecular Weight (predicted) of TMEM178: 33 kDa.

Molecular Weight (observed) of TMEM178: 24 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.