

TM7SF2 (L-12): sc-162327

BACKGROUND

Transmembrane 7 superfamily member 2 (TM7SF2, sterol C14-reductase, 3 β -hydroxysterol δ -reductase) is a 418 amino acid gene product that belongs to the ERG4/ERG24 family. TM7SF2 is a seven pass transmembrane protein that can localize to the membrane of the endoplasmic reticulum. TM7SF2 is involved in the conversion of lanosterol to cholesterol and, specifically, catalyzes the NADPH dependant reduction of 4,4-dimethyl-5- α -cholesta-8,14,24-trien-3- β -ol to 4,4-dimethyl-5- α -cholesta-8,24-dien-3- β -ol and NADP⁺.

REFERENCES

- Lemmens, I.H., Kas, K., Merregaert, J. and Van de Ven, W.J. 1998. Identification and molecular characterization of TM7SF2 in the FAUNA gene cluster on human chromosome 11q13. *Genomics* 49: 437-442.
- Holmer, L., Pezhman, A. and Worman, H.J. 1998. The human Lamin B receptor/sterol reductase multigene family. *Genomics* 54: 469-476.
- Waterham, H.R., Koster, J., Mooyer, P., Noort Gv, G., Kelley, R.I., Wilcox, W.R., Wanders, R.J., Hennekam, R.C. and Oosterwijk, J.C. 2003. Autosomal recessive HEM/Greenberg skeletal dysplasia is caused by 3 β -hydroxysterol δ 14-reductase deficiency due to mutations in the Lamin B receptor gene. *Am. J. Hum. Genet.* 72: 1013-1017.
- Bennati, A.M., Castelli, M., Della Fazio, M.A., Beccari, T., Caruso, D., Servillo, G. and Roberti, R. 2006. Sterol dependent regulation of human TM7SF2 gene expression: role of the encoded 3 β -hydroxysterol δ 14-reductase in human cholesterol biosynthesis. *Biochim. Biophys. Acta* 1761: 677-685.
- Bennati, A.M., Schiavoni, G., Franken, S., Piobbico, D., Della Fazio, M.A., Caruso, D., De Fabiani, E., Benedetti, L., Cusella De Angelis, M.G., Gieselmann, V., Servillo, G., Beccari, T. and Roberti, R. 2008. Disruption of the gene encoding 3 β -hydroxysterol δ -reductase (Tm7sf2) in mice does not impair cholesterol biosynthesis. *FEBS J.* 275: 5034-5047.
- Liu, Z., Rudd, M.D., Hernandez-Gonzalez, I., Gonzalez-Robayna, I., Fan, H.Y., Zeleznik, A.J. and Richards, J.S. 2009. FSH and FOXO1 regulate genes in the sterol/steroid and lipid biosynthetic pathways in granulosa cells. *Mol. Endocrinol.* 23: 649-661.
- Schiavoni, G., Bennati, A.M., Castelli, M., Fazio, M.A., Beccari, T., Servillo, G. and Roberti, R. 2010. Activation of TM7SF2 promoter by SREBP-2 depends on a new sterol regulatory element, a GC-box, and an inverted CCAAT-box. *Biochim. Biophys. Acta* 1801: 587-592.
- Zwinger, M., Kolb, T., Richter, K., Karakesisoglou, I. and Herrmann, H. 2010. Induction of a massive endoplasmic reticulum and perinuclear space expansion by expression of Lamin B receptor mutants and the related sterol reductases TM7SF2 and DHCR7. *Mol. Biol. Cell* 21: 354-368.

CHROMOSOMAL LOCATION

Genetic locus: TM7SF2 (human) mapping to 11q13.1; Tm7sf2 (mouse) mapping to 19 A.

SOURCE

TM7SF2 (L-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TM7SF2 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-162327 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TM7SF2 (L-12) is recommended for detection of TM7SF2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], 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 TM7SF3.

TM7SF2 (L-12) is also recommended for detection of TM7SF2 in additional species, including canine and porcine.

Suitable for use as control antibody for TM7SF2 siRNA (h): sc-96408, TM7SF2 siRNA (m): sc-154308, TM7SF2 shRNA Plasmid (h): sc-96408-SH, TM7SF2 shRNA Plasmid (m): sc-154308-SH, TM7SF2 shRNA (h) Lentiviral Particles: sc-96408-V and TM7SF2 shRNA (m) Lentiviral Particles: sc-154308-V.

Molecular Weight of TM7SF2: 46 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.