SANTA CRUZ BIOTECHNOLOGY, INC.

TMP21 siRNA (h): sc-63135

BACKGROUND

TMP21 (21 kDa transmembrane-trafficking protein), also known as TMED10 (transmembrane emp24 domain-containing protein 10), Tmp-21, S31I125, S31III125, p23 or p24δ, is a member of the EMP24/GP25L/p24 cargo family of proteins that regulates vesicular trafficking in the early secretory pathway. TMP21 is a ubiquitously expressed single-pass type I membrane protein localizing to the Golgi cisternae and the plasma membrane. It contains one GOLD (Golgi dynamics) domain and participates in protein transport and quality control between the endoplasmic reticulum (ER) and the Golgi complex. In addition, TMP21 is a component of the heteromeric secretase complex (or presenilin complex) and functions to regulate the γ-secretase activity. Two isoforms, namely TMP21-I and TMP21-II, exist for this protein.

REFERENCES

1. Sherrington, R., et al. 1995. Cloning of a gene bearing missense mutations in early-onset familial Alzheimer's disease. Nature 375: 754-760.
2. Blum, R., et al. 1996. TMP21 and p24A, two type I proteins enriched in pancreatic microsomal membranes, are members of a protein family involved in vesicular trafficking. J. Biol. Chem. 271: 17183-17189.
3. Blum, R., et al. 1999. Intracellular localization and *in vivo* trafficking of p24A and P23. J. Cell Sci. 112: 537-548.
4. Hörer, J., et al. 1999. A comparative study of rat and human TMP21 (P23) reveals the pseudogene-like features of human TMP21-II. DNA Seq. 10: 121-126.
5. Baker, L.A. and Gomez, R.A. 2000. TMP21-I, a vesicular trafficking protein, is differentially expressed during induction of the ureter and metanephros. J. Urol. 164: 562-566.
6. Barr, F.A., et al. 2001. Golgi matrix proteins interact with p24 cargo receptors and aid their efficient retention in the Golgi apparatus. J. Cell Biol. 155: 885-891.
7. Wang, H. and Kazanietz, M.G. 2002. Chimaerins, novel non-protein kinase C phorbol ester receptors, associate with TMP21-I (P23): evidence for a novel anchoring mechanism involving the chimaerin C1 domain. J. Biol. Chem. 277: 4541-4550.

CHROMOSOMAL LOCATION

Genetic locus: TMED10 (human) mapping to 14q24.3.

PRODUCT

TMP21 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TMP21 shRNA Plasmid (h): sc-63135-SH and TMP21 shRNA (h) Lentiviral Particles: sc-63135-V as alternate gene silencing products.

For independent verification of TMP21 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-63135A, sc-63135B and sc-63135C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

TMP21 siRNA (h) is recommended for the inhibition of TMP21 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

TMP21 (A-7): sc-137003 is recommended as a control antibody for monitoring of TMP21 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TMP21 gene expression knockdown using RT-PCR Primer: TMP21 (h)-PR: sc-63135-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

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