SANTA CRUZ BIOTECHNOLOGY, INC.

TPTE siRNA (m): sc-63144

BACKGROUND

TPTE (transmembrane phosphatase with tensin homology), also known as PTEN2 (phosphatase and tensin homolog 2) in mice or CT44 (cancer/testis antigen 44), is a 551 amino acid multi-pass membrane protein belonging to the PTEN-related family that is exclusively expressed in the testis and localizes to the plasma membrane in humans. The gene encoding TPTE is present in multiple copies in the human genome, some of which may be pseudogenes. TPTE contains one C2 tensin-type domain and one phosphatase tensin-type domain but, in humans, it does not exhibit phosphatase activity. However, the mouse ortholog (PTEN2) is a functional 3-phosphoinositide phosphatase that localizes to the Golgi apparatus and plays a possible role in signal transduction. In humans, four isoforms, namely TPTEα, TPTEβ, TPTEγ and TPTEδ, are produced by alternative splicing of this gene.

REFERENCES

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3. Guipponi, M., et al. 2001. The murine orthologue of the Golgi-localized TPTE protein provides clues to the evolutionary history of the human TPTE gene family. Hum. Genet. 109: 569-575.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604336. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Tapparel, C., et al. 2003. The TPTE gene family: cellular expression, subcellular localization and alternative splicing. Gene 323: 189-199.
6. Valiente, M., et al. 2005. Binding of PTEN to specific PDZ domains contributes to PTEN protein stability and phosphorylation by microtubule-associated serine/threonine kinases. J. Biol. Chem. 280: 28936-28943.
7. Mahadevan, D., et al. 2005. Transcript profiling in peripheral T-cell lymphoma, not otherwise specified, and diffuse large B-cell lymphoma identifies distinct tumor profile signatures. Mol. Cancer Ther. 4: 1867-1879.
8. Kawaguchi, K., et al. 2005. Genetic and epigenetic alterations of the PTEN gene in soft tissue sarcomas. Hum. Pathol. 36: 357-363.
9. Leslie, N.R., et al. 2007. PtdIns(3,4,5)P_3-dependent and -independent roles for PTEN in the control of cell migration. Curr. Biol. 17: 115-125.

CHROMOSOMAL LOCATION

Genetic locus: Tpte (mouse) mapping to 8 A2.

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.

PRODUCT

TPTE siRNA (m) 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 TPTE shRNA Plasmid (m): sc-63144-SH and TPTE shRNA (m) Lentiviral Particles: sc-63144-V as alternate gene silencing products.

For independent verification of TPTE (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-63144A, sc-63144B and sc-63144C.

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

TPTE siRNA (m) is recommended for the inhibition of TPTE expression in mouse 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TPTE gene expression knockdown using RT-PCR Primer: TPTE (m)-PR: sc-63144-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.