SANTA CRUZ BIOTECHNOLOGY, INC.

TSPEAR siRNA (h): sc-91435

BACKGROUND

TSPEAR, also known as C21orf9, is a 669 amino acid secreted protein. Expressed as two isoforms produced by alternative splicing, TSPEAR contains one Thrombospondin N-terminal domain and seven EAR (epilepsy-associated repeat) domains. EAR domains are found in several proteins, including TSPEAR, encoded by genes that map within chromosome regions associated with seizure disorders. It is thought that the EAR domain plays a role in the pathogenesis of epilepsy by either binding to an unknown epileptic ligand or interfering with axon synaptogenesis.

REFERENCES

1. Beckmann, G., et al. 1998. Merging extracellular domains: fold prediction for laminin G-like and amino-terminal Thrombospondin-like modules based on homology to pentraxins. J. Mol. Biol. 275: 725-730.
2. Bate, L. and Gardiner, M. 1999. Molecular genetics of human epilepsies. Expert. Rev. Mol. Med. 1999: 1-22.
3. Scheel, H., et al. 2002. A common protein interaction domain links two recently identified epilepsy genes. Hum. Mol. Genet. 11: 1757-1762.
4. Ptacek, L. 2002. Channelopathies: episodic disorders of the nervous system. Novartis Found. Symp. 241: 87-104.
5. Sjöblom, T., et al. 2006. The consensus coding sequences of human breast and colorectal cancers. Science 314: 268-274.

CHROMOSOMAL LOCATION

Genetic locus: TSPEAR (human) mapping to 21q22.3.

PRODUCT

TSPEAR 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 TSPEAR shRNA Plasmid (h): sc-91435-SH and TSPEAR shRNA (h) Lentiviral Particles: sc-91435-V as alternate gene silencing products.

For independent verification of TSPEAR (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-91435A, sc-91435B and sc-91435C.

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.

PROTOCOLS

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

APPLICATIONS

TSPEAR siRNA (h) is recommended for the inhibition of TSPEAR 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

TSPEAR (A-10): sc-373868 is recommended as a control antibody for monitoring of TSPEAR 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 TSPEAR gene expression knockdown using RT-PCR Primer: TSPEAR (h)-PR: sc-91435-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Peled, A., et al. 2016. Mutations in TSPEAR, encoding a regulator of Notch signaling, affect tooth and hair follicle morphogenesis. PLoS Genet. 12: e1006369.

RESEARCH USE

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