SANTA CRUZ BIOTECHNOLOGY, INC.

TROP-2 siRNA (m): sc-72393

BACKGROUND

TROP-2, also known as tumor-associated calcium signal transducer-2 (TACSTD2); pancreatic carcinoma marker protein GA733-1; membrane component chromosome 1, surface marker 1 (M1S1); or epithelial glycoprotein-1 (EGP-1), is a cell surface glycoprotein receptor. It is a single pass type I membrane protein containing one thryoglobulin type 1 domain, an epidermal growth factor-like repeat, a phosphatidylinositol binding site and tyrosine phosphorylation sites near the C-terminus. TROP-2 plays a role in tranducing intracellular calcium signals. It is expressed in trophoblast cells, cornea and multistratified epithelia. It is also highly expressed in several types of tumors and is involved in regulating the growth of carcinoma cells. Mutations in the gene encoding TROP-2 can result in gelatinous drop-like corneal dystrophy (GDLD), also referred to as lattice corneal dystrophy type III, an autosomal recessive disorder that causes severe visual impairment.

REFERENCES

1. Linnenbach, A.J., et al. 1989. Sequence investigation of the major gastrointestinal tumor-associated antigen gene family, GA733. Proc. Natl. Acad. Sci. USA 86: 27-31.
2. Fornaro, M., et al. 1995. Cloning of the gene encoding TROP-2, a cell-surface glycoprotein expressed by human carcinomas. Int. J. Cancer 62: 610-618.
3. Tsujikawa, M., et al. 1999. Identification of the gene responsible for gelatinous drop-like corneal dystrophy. Nat. Genet. 21: 420-423.
4. Tasa, G., et al. 2001. A novel mutation in the M1S1 gene responsible for gelatinous droplike corneal dystrophy. Invest. Ophthalmol. Vis. Sci. 42: 2762-2764.
5. Ren, Z., et al. 2002. Allelic and locus heterogeneity in autosomal recessive gelatinous drop-like corneal dystrophy. Hum. Genet. 110: 568-577.
6. Murakami, A., et al. 2004. Mutations in the membrane component, chromosome 1, surface marker 1 (M1S1) gene in gelatinous drop-like corneal dystrophy. Jpn. J. Ophthalmol. 48: 317-320.

CHROMOSOMAL LOCATION

Genetic locus: Tacstd2 (mouse) mapping to 6 C1.

PRODUCT

TROP-2 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 TROP-2 shRNA Plasmid (m): sc-72393-SH and TROP-2 shRNA (m) Lentiviral Particles: sc-72393-V as alternate gene silencing products.

For independent verification of TROP-2 (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-72393A, sc-72393B and sc-72393C.

RESEARCH USE

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

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

TROP-2 siRNA (m) is recommended for the inhibition of TROP-2 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.

GENE EXPRESSION MONITORING

TROP-2 (F-5): sc-376181 is recommended as a control antibody for monitoring of TROP-2 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 TROP-2 gene expression knockdown using RT-PCR Primer: TROP-2 (m)-PR: sc-72393-PR (20 µl, 375 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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