SANTA CRUZ BIOTECHNOLOGY, INC.

PTPLA siRNA (h): sc-90324

BACKGROUND

PTPLA (protein tyrosine phosphatase-like (proline instead of catalytic arginine), member A), also known as CAP (cementum attachment protein), is a 288 amino acid multi-pass membrane protein that is highly expressed in myocardium, and to a lesser extent in skeletal and smooth muscular tissues. PTPLA is a member of the protein tyrosine phosphatase (PTP) family of proteins, which are known to be signaling molecules that regulate signal transduction pathways leading to cell growth, differentiation and oncogenic transformation. PTPs mediate the dephosphorylation of phosphotyrosine. The tissue specific expression of PTPLA in the developing and adult heart suggests a role in regulating cardiac development and differentiation. PTPLA exist as 2 alternatively spliced isoforms and is encoded by a gene located on human chromosome 10, which houses over 1,200 genes and comprises nearly 4.5% of the human genome.

REFERENCES

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2. den Hertog, J., et al. 1995. Stimulation of receptor protein-tyrosine phosphatase α activity and phosphorylation by phorbol ester. Cell Growth Differ. 6: 303-307.
3. Zondag, G.C., et al. 1995. Homophilic interactions mediated by receptor tyrosine phosphatases μ and κ. A critical role for the novel extracellular MAM domain. J. Biol. Chem. 270: 14247-14250.
4. wanogho, D.A., et al. 1999. Molecular cloning, chromosomal mapping, and developmental expression of a novel protein tyrosine phosphatase-like gene. Genomics 62: 406-416.
5. Li, D., et al. 2000. Human protein tyrosine phosphatase-like gene: expression profile, genomic structure, and mutation analysis in families with ARVD. Gene 256: 237-243.
6. Pelé, M., et al. 2005. SINE exonic insertion in the PTPLA gene leads to multiple splicing defects and segregates with the autosomal recessive centronuclear myopathy in dogs. Hum. Mol. Genet. 14: 1417-1427.
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CHROMOSOMAL LOCATION

Genetic locus: HACD1 (human) mapping to 10p12.33.

PRODUCT

PTPLA 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 PTPLA shRNA Plasmid (h): sc-90324-SH and PTPLA shRNA (h) Lentiviral Particles: sc-90324-V as alternate gene silencing products.

For independent verification of PTPLA (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-90324A, sc-90324B and sc-90324C.

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

PTPLA siRNA (h) is recommended for the inhibition of PTPLA 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PTPLA gene expression knockdown using RT-PCR Primer: PTPLA (h)-PR: sc-90324-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.