SANTA CRUZ BIOTECHNOLOGY, INC.

PHOSPHO2 siRNA (h): sc-94280

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The Power to Question

BACKGROUND

PHOSPHO2 (phosphatase, orphan 2), also known as pyridoxal phosphate phosphatase PHOSPHO2, is a 241 amino acid protein that belongs to the HAD-like hydrolase superfamily and the PHOSPHO family. PHOSPHO2 shares 42% sequence identity with PHOSPHO1, with both proteins containing three catalytic motifs conserved within the superfamily. PHOSPHO2 contains one PH domain, which mediates phosphoinositide binding. Encoded by a gene that maps to human chromosome 2q31.1, PHOSPHO2 exists as two alternatively spliced isoforms and exhibits high activity toward pyridoxal 5'-phosphate (PLP). PHOSPHO2 is also active at much lower levels toward pyrophosphate, phosphoethanolamine (PEA), phosphocholine (PCho), phospho-l-tyrosine, fructose-6-phosphate, PNNP and η-glycerophosphate.

REFERENCES

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2. Grimwood, J., et al. 2004. The DNA sequence and biology of human chromosome 19. Nature 428: 529-535.
3. Roberts, S.J., et al. 2005. Probing the substrate specificities of human PHOSPHO1 and PHOSPHO2. Biochim. Biophys. Acta 1752: 73-82.
4. Oh, J.H., et al. 2005. Transcriptome analysis of human gastric cancer. Mamm. Genome 16: 942-954.
5. Hillier, L.W., et al. 2005. Generation and annotation of the DNA sequences of human chromosomes 2 and 4. Nature 434: 724-731.
6. Kimura, K., et al. 2006. Diversification of transcriptional modulation: large-scale identification and characterization of putative alternative promoters of human genes. Genome Res. 16: 55-65.
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CHROMOSOMAL LOCATION

Genetic locus: PHOSPHO2 (human) mapping to 2q31.1.

PRODUCT

PHOSPHO2 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 PHOSPHO2 shRNA Plasmid (h): sc-94280-SH and PHOSPHO2 shRNA (h) Lentiviral Particles: sc-94280-V as alternate gene silencing products.

For independent verification of PHOSPHO2 (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-94280A, sc-94280B and sc-94280C.

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

PHOSPHO2 siRNA (h) is recommended for the inhibition of PHOSPHO2 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

PHOSPHO2 (G-8): sc-398826 is recommended as a control antibody for monitoring of PHOSPHO2 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-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (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 PHOSPHO2 gene expression knockdown using RT-PCR Primer: PHOSPHO2 (h)-PR: sc-94280-PR (20 µl). 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.