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SANTA CRUZ BIOTECHNOLOGY, INC.

PDP2 siRNA (m): sc-152140

BACKGROUND

Pyruvate dehydrogenase phosphatase (PDP) is a serine phosphatase that catalyzes the dephosphorylation and reactivation of the α subunit of the E1 component of the mitochondrial pyruvate dehydrogenase multienzyme complex. PDP is a heterodimer that consists of catalytic and regulatory subunits. PDP2 (pyruvate dehyrogenase phosphatase catalytic subunit 2), also known as PPM2C2, is a 529 amino acid mitochondrial matrix protein belonging to the PP2c family. Utilizing two magnesium ions as cofactors, PDP2 catalyzes the dephosphorylation and concomitant reactivation of the α subunit of the E1 component of the pyruvate dehydrogenase complex. PDP2 exists as a heterodimer containing a PDP2c catalytic subunit and a FAD protein of unknown function. PDP2 is encoded by a gene located on human chromosome 16, which is associated with a variety of genetic disorders, encodes over 900 genes and comprises nearly 3% of the human genome.

REFERENCES

1. Patel, M.S., et al. 2001. Regulation of mammalian pyruvate dehydrogenase complex by phosphorylation: complexity of multiple phosphorylation sites and kinases. Exp. Mol. Med. 33: 191-197.
2. Karpova, T., et al. 2003. Characterization of the isozymes of pyruvate dehydrogenase phosphatase: implications for the regulation of pyruvate dehydrogenase activity. Biochim. Biophys. Acta 1652: 126-135.
3. Karpova, T., et al. 2004. Probing a putative active site of the catalytic subunit of pyruvate dehydrogenase phosphatase 1 (PDP1c) by site-directed mutagenesis. Biochim. Biophys. Acta 1700: 43-51.
4. Maj, M.C., et al. 2005. Pyruvate dehydrogenase phosphatase deficiency: identification of the first mutation in two brothers and restoration of activity by protein complementation. J. Clin. Endocrinol. Metab. 90: 4101-4107.
5. Cameron, J.M., et al. 2007. Identification of a canine model of pyruvate dehydrogenase phosphatase 1 deficiency. Mol. Genet. Metab. 90: 15-23.

CHROMOSOMAL LOCATION

Genetic locus: Pdp2 (mouse) mapping to 8 D3.

PRODUCT

PDP2 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 PDP2 shRNA Plasmid (m): sc-152140-SH and PDP2 shRNA (m) Lentiviral Particles: sc-152140-V as alternate gene silencing products.

For independent verification of PDP2 (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-152140A, sc-152140B and sc-152140C.

PROTOCOLS

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

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

PDP2 siRNA (m) is recommended for the inhibition of PDP2 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 PDP2 gene expression knockdown using RT-PCR Primer: PDP2 (m)-PR: sc-152140-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.