

PTBP-2 siRNA (m): sc-106461

BACKGROUND

PTBP-2 (polypyrimidine tract binding protein 2), also known as PTB or nPTB (neural polypyrimidine tract-binding protein), is a member of the polypyrimidine tract binding family of proteins. Predominantly expressed in brain, but also found in heart and skeletal muscle, PTBP-2 localizes to the nucleus and contains four RRM (RNA recognition motif) domains. PTBP-2 functions as an RNA-binding protein associated in a complex that is involved in the regulation of exon splicing and the stabilization of mRNAs in the cytoplasm. Six isoforms exist for PTBP-2 due to alternative splicing events. Isoforms 1 and 2 (also known as nPTB1 and nPTB2/PTBPLP-L, respectively) are neuronal-specific. Isoforms 3 and 4 (also known as nPTB3/PTBPLP-L and nPTB4, respectively) are found in non-neuronal tissues, as are isoforms 5 and 6 (also known as nPTB5/nPTB7/PTBPLP-S and nPTB6/nPTB8/PTBPLP-S, respectively). The existence of various isoforms may function to modulate the RNA-binding properties of PTBP-2.

REFERENCES

1. Markovtsov, V., et al. 2000. Cooperative assembly of an hnRNP complex induced by a tissue-specific homolog of polypyrimidine tract binding protein. *Mol. Cell. Biol.* 20: 7463-7479.
2. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608449. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Rahman, L., et al. 2004. Evolutionary conservation of a 2-kb intronic sequence flanking a tissue-specific alternative exon in the PTBP2 gene. *Genomics* 83: 76-84.
4. Xu, M. and Hecht, N.B. 2007. Polypyrimidine tract binding protein 2 stabilizes phosphoglycerate kinase 2 mRNA in murine male germ cells by binding to its 3'UTR. *Biol. Reprod.* 76: 1025-1033.
5. Coutinho-Mansfield, G.C., et al. 2007. PTB/nPTB switch: a post-transcriptional mechanism for programming neuronal differentiation. *Genes Dev.* 21: 1573-1577.
6. Makeyev, E.V., Zhang, J., Carrasco, M.A. and Maniatis, T. 2007. The MicroRNA miR-124 promotes neuronal differentiation by triggering brain-specific alternative pre-mRNA splicing. *Mol. Cell* 27: 435-448.

CHROMOSOMAL LOCATION

Genetic locus: Ptpb2 (mouse) mapping to 3 G1.

PRODUCT

PTBP-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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PTBP-2 shRNA Plasmid (m): sc-106461-SH and PTBP-2 shRNA (m) Lentiviral Particles: sc-106461-V as alternate gene silencing products.

For independent verification of PTBP-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-106461A, sc-106461B and sc-106461C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PTBP-2 siRNA (m) is recommended for the inhibition of PTBP-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 μ M in 66 μ l. 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

PTBP-2 (A-10): sc-376316 is recommended as a control antibody for monitoring of PTBP-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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 PTBP-2 gene expression knockdown using RT-PCR Primer: PTBP-2 (m)-PR: sc-106461-PR (20 μ l). 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.