

PIPPIN siRNA (h): sc-76146

BACKGROUND

PIPPIN, also known as CSDC2 (cold shock domain containing C2, RNA binding), is a Y-box protein and belongs to a family of highly conserved RNA-binding transcriptional regulators. Predominantly expressed in brain cells and localizing to the nucleus and the cytoplasm, PIPPIN contains two RNA-binding motifs, namely PIP1 and PIP2, and one CSD domain. PIPPIN functions as a nucleic acid binding regulatory factor and is believed to participate in brain maturation. More specifically, PIPPIN binds to the 3'-UTR ends of the mRNAs encoding Histone H1 and Histone H3.3. This interaction requires all of the PIPPIN domains to work in concert as one functional protein. In addition, PIPPIN can be sumoylated in a thyroid hormone (T3)-dependent manner. This suggests that PIPPIN modification in response to extracellular stimuli may modulate the regulation of protein synthesis.

REFERENCES

1. Castiglia, D., et al. 1996. PIPPIN, a putative RNA-binding protein specifically expressed in the rat brain. *Biochem. Biophys. Res. Commun.* 218: 390-394.
2. Nastasi, T., et al. 1999. PIPPIN is a brain-specific protein that contains a cold-shock domain and binds specifically to H1 degrees and H3.3 mRNAs. *J. Biol. Chem.* 274: 24087-24093.
3. Nastasi, T., et al. 2000. Specific neurons of brain cortex and cerebellum are PIPPIN positive. *Neuroreport* 11: 2233-2236.
4. Schäfer, C., et al. 2003. CRHSP-24 phosphorylation is regulated by multiple signaling pathways in pancreatic acinar cells. *Am. J. Physiol. Gastrointest. Liver Physiol.* 285: G726-G734.
5. Raimondi, L., et al. 2003. RNA-binding ability of PIPPIN requires the entire protein. *J. Cell. Mol. Med.* 7: 35-42.
6. Cannino, G., et al. 2004. Analysis of cytochrome C oxidase subunits III and IV expression in developing rat brain. *Neuroscience* 128: 91-98.

CHROMOSOMAL LOCATION

Genetic locus: CSDC2 (human) mapping to 22q13.2.

PRODUCT

PIPPIN siRNA (h) is a pool of 2 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 PIPPIN shRNA Plasmid (h): sc-76146-SH and PIPPIN shRNA (h) Lentiviral Particles: sc-76146-V as alternate gene silencing products.

For independent verification of PIPPIN (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-76146A and sc-76146B.

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 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

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

PIPPIN (G-4): sc-376693 is recommended as a control antibody for monitoring of PIPPIN 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 PIPPIN gene expression knockdown using RT-PCR Primer: PIPPIN (h)-PR: sc-76146-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.