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Pumilio 2 siRNA (h): sc-44773

BACKGROUND

Pumilio 2 is a sequence-specific RNA-binding protein that regulates translation and mRNA stability by binding mRNA targets. It supports proliferation and self-renewal of stem cells by regulating the translation of key transcripts. The Pumilio gene encodes proteins that are required for development of germ stem cells in one or both sexes. The Pumilio protein interacts with the human Nanos1 protein, and this interaction may play a conserved role in germ cell development. Pumilio 2 is highly expressed in testis and ovary and at lower levels in brain, heart, kidney, liver, muscle, placenta, intestine and stomach. It is also expressed in stem cells, germ cells and in most fetal tissues.

REFERENCES

1. Spassov, D.S. and Jurecic, R. 2002. Cloning and comparative sequence analysis of PUM1 and PUM2 genes, human members of the Pumilio family of RNA-binding proteins. *Gene* 299: 195-204.
2. Jaruzelska, J., et al. 2003. Conservation of a Pumilio-Nanos complex from *Drosophila* germ plasm to human germ cells. *Dev. Genes Evol.* 213: 120-126.
3. Moore, F.L., et al. 2003. Human Pumilio 2 is expressed in embryonic stem cells and germ cells and interacts with DAZ (deleted in azoospermia) and DAZ-like proteins. *Proc. Natl. Acad. Sci. USA* 100: 538-543.
4. Spik, A., et al. 2006. Candidate mRNAs interacting with fertility protein Pumilio 2 in the human germ line. *Reprod. Biol.* 6: 37-42.

CHROMOSOMAL LOCATION

Genetic locus: PUM2 (human) mapping to 2p24.1.

PRODUCT

Pumilio 2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Pumilio 2 shRNA Plasmid (h): sc-44773-SH and Pumilio 2 shRNA (h) Lentiviral Particles: sc-44773-V as alternate gene silencing products.

For independent verification of Pumilio 2 (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-44773A, sc-44773B and sc-44773C.

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

Pumilio 2 siRNA (h) is recommended for the inhibition of Pumilio 2 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

Pumilio 2 (C-8): sc-514108 is recommended as a control antibody for monitoring of Pumilio 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 Pumilio 2 gene expression knockdown using RT-PCR Primer: Pumilio 2 (h)-PR: sc-44773-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Janecki, D.M., et al. 2018. SPIN1 is a proto-oncogene and SPIN3 is a tumor suppressor in human seminoma. *Oncotarget* 9: 32466-32477.
2. Sajek, M., et al. 2019. PUM1 and PUM2 exhibit different modes of regulation for SIAH1 that involve cooperativity with NANOS paralogues. *Cell. Mol. Life Sci.* 76: 147-161.
3. Kulkarni, R.P., et al. 2019. miRNA-dependent regulation of STIM1 expression in breast cancer. *Sci. Rep.* 9: 13076.
4. Smialek, M.J., et al. 2020. Kinesin KIF18A is a novel PUM regulated target promoting mitotic progression and survival of human male germ cell line. *J. Cell Sci.* 133: jcs240986.
5. Smialek, M.J., et al. 2020. Characterization of RNP networks of PUM1 and PUM2 post-transcriptional regulators in TCam-2 cells, a human male germ cell model. *Cells* 9: 984.

RESEARCH USE

For research use only, not for use in diagnostic procedures.