SANTA CRUZ BIOTECHNOLOGY, INC.

Pumilio 1 siRNA (h): sc-62912

BACKGROUND

Pumilio 1, also known as PUM1, PUMH1 (Pumilio homolog 1), HSPUM, PUMH or PUML1, is a homolog of the *Drosophila* Pumilio protein and belongs to the PUF family. The PUF family is comprised of evolutionarily conserved proteins that contain a C-terminal RNA-binding domain made up of eight highly conserved tandem repeats. PUF proteins function as sequence-specific RNA-binding proteins and bind NREs (nanos response elements) in the 3'-untranslated regions of target mRNAs. They play an important role mediating mRNA stabilization and repressing translation. Pumilio 1 is a typical PUF protein expressed in fetal tissues as well as adult stomach, kidney, intestine, muscle, brain and heart tissues. Pumilio 1 localizes to the cytoplasm and is believed to participate in cell fate, cell development, cell differentiation and maintenance of somatic stem cells.

REFERENCES

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2. 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.
3. Wang, X., et al. 2002. Modular recognition of RNA by a human Pumilio-homology domain. Cell 110: 501-512.
4. Spassov, D.S. and Jurecic, R. 2003. The PUF family of RNA-binding proteins: does evolutionarily conserved structure equal conserved function? IUBMB Life 55: 359-366.
5. Islam, S., et al. 2005. Developmental and regional expression and localization of mRNAs encoding proteins involved in RNA translocation. J. Histochem. Cytochem. 53: 1501-1509.
6. Vessey, J.P., et a. 2006. Dendritic localization of the translational repressor Pumilio 2 and its contribution to dendritic stress granules. J. Neurosci. 26: 6496-6508.
7. Xu, E.Y., et al. 2007. A gene trap mutation of a murine homolog of the *Drosophila* stem cell factor Pumilio results in smaller testes but does not affect litter size or fertility. Mol. Reprod. Dev. 74: 912-921.

CHROMOSOMAL LOCATION

Genetic locus: PUM1 (human) mapping to 1p35.2.

PRODUCT

Pumilio 1 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 Pumilio 1 shRNA Plasmid (h): sc-62912-SH and Pumilio 1 shRNA (h) Lentiviral Particles: sc-62912-V as alternate gene silencing products.

For independent verification of Pumilio 1 (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-62912A, sc-62912B and sc-62912C.

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

Pumilio 1 siRNA (h) is recommended for the inhibition of Pumilio 1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Pumilio 1 gene expression knockdown using RT-PCR Primer: Pumilio 1 (h)-PR: sc-62912-PR (20 µl). 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.