SANTA CRUZ BIOTECHNOLOGY, INC.

WIPI-2 siRNA (h): sc-72212

BACKGROUND

Phosphatidylinositol is a negatively charged phospholipid that is found in the cellular membrane. When phosphorylated, phosphatidylinositol is known as phosphoinositide. Phosphoinositide is important in signal transduction, lipid signaling and membrane trafficking. WIPI-2 (WD repeat domain phosphoinositide-interacting protein 2), also known as WIPI49-like protein 2, is a 454 amino acid protein that is highly expressed in the heart, skeletal muscle and pancreas. WD40 family members function to regulate assembly of multi-protein complexes using a propeller platform for reversible interactions. WIPI-2 specifically has a seven-bladed propeller and a motif for interaction with phospholipids. Expression of WIPI-2 is downregulated in pancreatic and kidney tumors. WIPI-2 is encoded by a gene that maps to human chromosome 7p22.1 which houses over 1,000 genes and comprises nearly 5% of the human genome.

REFERENCES

1. Hillier, L.W., et al. 2003. The DNA sequence of human chromosome 7. Nature 424: 157-164.
2. Proikas-Cezanne, T., et al. 2004. WIPI-1α (WIPI49), a member of the novel 7-bladed WIPI protein family, is aberrantly expressed in human cancer and is linked to starvation-induced autophagy. Oncogene 23: 9314-9325.
3. Pattingre, S. and Levine, B. 2006. Bcl-2 inhibition of autophagy: a new route to cancer? Cancer Res. 66: 2885-2888.
4. Proikas-Cezanne, T., et al. 2007. Human WIPI-1 puncta-formation: a novel assay to assess mammalian autophagy. FEBS Lett. 581: 3396-3404.
5. Nowak, J., et al. 2009. The TP53INP2 protein is required for autophagy in mammalian cells. Mol. Biol. Cell 20: 870-881.

CHROMOSOMAL LOCATION

Genetic locus: WIPI2 (human) mapping to 7p22.1.

PRODUCT

WIPI-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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see WIPI-2 shRNA Plasmid (h): sc-72212-SH and WIPI-2 shRNA (h) Lentiviral Particles: sc-72212-V as alternate gene silencing products.

For independent verification of WIPI-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-72212A, sc-72212B and sc-72212C.

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

WIPI-2 siRNA (h) is recommended for the inhibition of WIPI-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 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 WIPI-2 gene expression knockdown using RT-PCR Primer: WIPI-2 (h)-PR: sc-72212-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. Liao, C.C., et al. 2018. Autophagic degradation of SQSTM1 inhibits ovarian cancer motility by decreasing DICER1 and AGO2 to induce MIRLET7A-3P. Autophagy 14: 2065-2082.
2. Mohamud, Y., et al. 2020. Coxsackievirus infection induces a non-canonical autophagy independent of the ULK and PI3K complexes. Sci. Rep. 10: 19068.

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.