

PATZ1 siRNA (h): sc-76072

BACKGROUND

Zinc-finger proteins contain DNA-binding domains and have a wide variety of functions, most of which encompass some form of transcriptional activation or repression. The majority of zinc-finger proteins contain a Krüppel-type DNA binding domain and a KRAB domain, which is thought to interact with KAP1, thereby recruiting histone modifying proteins. PATZ1 (POZ (BTB) and AT hook containing zinc finger 1), also known as PATZ, RIAZ, ZBTB19, ZNF278 or ZSG, is a 687 amino acid protein that localizes to the nucleus and contains one AT hook DNA-binding domain, one BTB (POZ) domain and seven C₂H₂-type zinc fingers. Expressed ubiquitously, PATZ1 functions as a transcriptional repressor and may be involved in the pathogenesis of small round cell sarcoma, as well as human colorectal cancer. Multiple isoforms of PATZ1 exist due to alternative splicing events.

REFERENCES

1. Fedele, M., et al. 2000. A novel member of the BTB/POZ family, PATZ, associates with the RNF4 RING finger protein and acts as a transcriptional repressor. *J. Biol. Chem.* 275: 7894-7901.
2. Kobayashi, A., et al. 2000. A combinatorial code for gene expression generated by transcription factor Bach2 and MAZR (MAZ-related factor) through the BTB/POZ domain. *Mol. Cell. Biol.* 20: 1733-1746.
3. Mastrangelo, T., et al. 2000. A novel zinc finger gene is fused to EWS in small round cell tumor. *Oncogene* 19: 3799-3804.
4. Pero, R., et al. 2002. PATZ attenuates the RNF4-mediated enhancement of androgen receptor-dependent transcription. *J. Biol. Chem.* 277: 3280-3285.

CHROMOSOMAL LOCATION

Genetic locus: PATZ1 (human) mapping to 22q12.2.

PRODUCT

PATZ1 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 PATZ1 shRNA Plasmid (h): sc-76072-SH and PATZ1 shRNA (h) Lentiviral Particles: sc-76072-V as alternate gene silencing products.

For independent verification of PATZ1 (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-76072A, sc-76072B and sc-76072C.

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

PATZ1 siRNA (h) is recommended for the inhibition of PATZ1 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

PATZ1 (H-2): sc-393223 is recommended as a control antibody for monitoring of PATZ1 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 PATZ1 gene expression knockdown using RT-PCR Primer: PATZ1 (h)-PR: sc-76072-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. Ho, M.Y., et al. 2016. PATZ1 induces PP4R2 to form a negative feedback loop on IKK/NF κ B signaling in lung cancer. *Oncotarget* 7: 52255-52269.
2. Ng, Z.L., et al. 2021. PATZ1 (MAZR) co-occupies genomic sites with p53 and inhibits liver cancer cell proliferation via regulating p27. *Front. Cell Dev. Biol.* 9: 586150.

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.