SANTA CRUZ BIOTECHNOLOGY, INC.

pirin siRNA (m): sc-61360

BACKGROUND

Pirin (also designated iron-binding nuclear protein) is a highly conserved eukaryotic protein involved in transcriptional activation and apoptosis. Pirin mRNA is poorly expressed in all human tissues, and multiple pirin transcripts are expressed in heart and skeletal muscle. Research indicates that the expression of pirin may be localized to subnuclear structures. The interaction of pirin with NFI/CTF1 (nuclear factor I/CCAAT box transcription factor) classifies pirin as a putative NFI/CTF1 cofactor, which might lead to new insights in NFI/CTF1 activity. Pirin may be a significant factor in transcriptional regulation and is presumably involved in the regulation of DNA transcription and replication.

REFERENCES

1. Wendler, W.M., et al. 1997. Identification of pirin, a novel highly conserved nuclear protein. J. Biol. Chem. 272: 8482-8489.
2. Orzaez, D., et al. 2001. A tomato homologue of the human protein pirin is induced during programmed cell death. Plant Mol. Biol. 46: 459-468.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603329. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Zeng, Q., et al. 2003. Purification, crystallization and preliminary X-ray analysis of human pirin. Acta Crystallogr. D, Biol. Crystallogr. 59: 1496-1498.
5. Hihara, Y., et al. 2004. A cyanobacterial gene encoding an ortholog of pirin is induced under stress conditions. FEBS Lett. 574: 101-105.
6. Pang, H., et al. 2004. Crystal structure of human pirin: an iron-binding nuclear protein and transcription cofactor. J. Biol. Chem. 279: 1491-1498.
7. Yoshikawa, R., et al. 2004. Gene expression in response to anti-tumour intervention by polysaccharide-K (PSK) in colorectal carcinoma cells. Oncol. Rep. 12: 1287-1293.
8. Adams, M. and Jia, Z. 2005. Structural and biochemical analysis reveal pirins to possess quercetinase activity. J. Biol. Chem. 280: 28675-28682.
9. Gelbman, B.D., et al. 2007. Upregulation of pirin expression by chronic cigarette smoking is associated with bronchial epithelial cell apoptosis. Respir. Res. 8: 10.

CHROMOSOMAL LOCATION

Genetic locus: Pir (mouse) mapping to X F5.

PRODUCT

pirin siRNA (m) 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 pirin shRNA Plasmid (m): sc-61360-SH and pirin shRNA (m) Lentiviral Particles: sc-61360-V as alternate gene silencing products.

For independent verification of pirin (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61360A, sc-61360B and sc-61360C.

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

pirin siRNA (m) is recommended for the inhibition of pirin expression in mouse 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.

GENE EXPRESSION MONITORING

pirin (D-10): sc-271623 is recommended as a control antibody for monitoring of pirin 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 pirin gene expression knockdown using RT-PCR Primer: pirin (m)-PR: sc-61360-PR (20 µl). 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.