SANTA CRUZ BIOTECHNOLOGY, INC.

Purβ siRNA (h): sc-89882

BACKGROUND

Purβ (purine-rich element-binding protein B), also known as transcriptional activator protein Purβ, is a 312 amino acid protein that belongs to the PUR DNA-binding protein family. The Purβ gene product is a sequence-specific, single-stranded DNA-binding protein. It binds preferentially to the single strand of the purine-rich element termed PUR, which is present at origins of replication and in gene flanking regions in a variety of eukaryotes from yeasts through humans. Thus, the Purβ protein is implicated in the control of both DNA replication and transcription. Deletion of the Purβ gene has been associated with myelodysplastic syndrome and acute myelogenous leukemia (AML), which is a malignant disease where in hematopoietic precursors are arrested in an early stage of development. Localizing to nucleus, the Purβ protein is expressed in myocardium of heart failure patients. The Purβ gene is conserved in mouse, rat, zebrafish, fruit fly, mosquito, *C. elegans, A. thaliana* and rice. and maps to human chromosome 7p13.

REFERENCES

1. Bergemann, A.D., et al. 1992. Sequence of cDNA comprising the human Pur gene and sequence-specific single-stranded-DNA-binding properties of the encoded protein. Mol. Cell. Biol. 12: 5673-5682.
2. Kelm, R.J., et al. 1996. Repression of transcriptional enhancer factor-1 and activator protein-1-dependent enhancer activity by vascular Actin single-stranded DNA binding factor 2. J. Biol. Chem. 271: 24278-24285.
3. Kelm, R.J., et al. 1997. Sequence of cDNAs encoding components of vascular Actin single-stranded DNA-binding factor 2 establish identity to Purα and Purβ. J. Biol. Chem. 272: 26727-26733.
4. Lezon-Geyda, K., et al. 2001. Deletions of PURA, at 5q31, and PURB, at 7p13, in myelodysplastic syndrome and progression to acute myelogenous leukemia. Leukemia 15: 954-962.
5. Gupta, M., et al. 2003. Single-stranded DNA-binding proteins PURα and PURβ bind to a purine-rich negative regulatory element of the α-Myosin heavy chain gene and control transcriptional and translational regulation of the gene expression. Implications in the repression of α-Myosin heavy chain during heart failure. J. Biol. Chem. 278: 44935-44948.
6. Hillier, L.W., et al. 2003. The DNA sequence of human chromosome 7. Nature 424: 157-164.

CHROMOSOMAL LOCATION

Genetic locus: PURB (human) mapping to 7p13.

PRODUCT

Purβ 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 Purβ shRNA Plasmid (h): sc-89882-SH and Purβ shRNA (h) Lentiviral Particles: sc-89882-V as alternate gene silencing products.

For independent verification of Purβ (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-89882A, sc-89882B and sc-89882C.

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

Purβ siRNA (h) is recommended for the inhibition of Purβ 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.

GENE EXPRESSION MONITORING

Purβ (211H2H): sc-517644 is recommended as a control antibody for monitoring of Purβ 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 Purβ gene expression knockdown using RT-PCR Primer: Purβ (h)-PR: sc-89882-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.