SANTA CRUZ BIOTECHNOLOGY, INC.

PSTPIP1 siRNA (h): sc-90246

BACKGROUND

PSTPIP1 (proline-serine-threonine phosphatase interacting protein 1), also known as H-PIP, PAPAS, CD2BP1, PSTPIP, CD2BP1L or CD2BP1S, is a 416 amino acid protein that localizes to both the cytoplasm and the cytoskeleton and contains one SH3 domain and one FCH domain. Expressed at high levels in T cells and spleen and present at lower levels in thymus, lung, placenta and small intestine, PSTPIP1 interacts with CD2AP, BDP1 and c-Abl and is involved in the regulation of the Actin cytoskeleton, possibly functioning as a scaffold protein that may promote Actin polymerization. Defects in the gene encoding PSTPIP1 are the cause of PAPA syndrome (PAPAS), an autosomal dominant disease characterized by recurring inflammatory episodes that affect skin and joint tissue. Multiple isoforms of PSTPIP1 exist due to alternative splicing events.

REFERENCES

1. Spencer, S., et al. 1997. PSTPIP: a tyrosine phosphorylated cleavage furrow-associated protein that is a substrate for a PEST tyrosine phosphatase. J. Cell Biol. 138: 845-860.
2. Li, J., et al. 1998. A Cdc15-like adaptor protein (CD2BP1) interacts with the CD2 cytoplasmic domain and regulates CD2-triggered adhesion. EMBO J. 17: 7320-7336.
3. Dowbenko, D., et al. 1998. Identification of a novel polyproline recognition site in the cytoskeletal associated protein, proline-serine-threonine phosphatase interacting protein. J. Biol. Chem. 273: 989-996.
4. Wu, Y., et al. 1998. Tyrosine phosphorylation regulates the SH3-mediated binding of the Wiskott-Aldrich syndrome protein to PSTPIP, a cytoskeletal-associated protein. J. Biol. Chem. 273: 5765-5770.
5. Cong, F., et al. 2000. Cytoskeletal protein PSTPIP1 directs the PEST-type protein tyrosine phosphatase to the c-Abl kinase to mediate Abl dephosphorylation. Mol. Cell 6: 1413-1423.
6. Wise, C.A., et al. 2002. Mutations in CD2BP1 disrupt binding to PTP PEST and are responsible for PAPA syndrome, an autoinflammatory disorder. Hum. Mol. Genet. 11: 961-969.

CHROMOSOMAL LOCATION

Genetic locus: PSTPIP1 (human) mapping to 15q24.3.

PRODUCT

PSTPIP1 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 PSTPIP1 shRNA Plasmid (h): sc-90246-SH and PSTPIP1 shRNA (h) Lentiviral Particles: sc-90246-V as alternate gene silencing products.

For independent verification of PSTPIP1 (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-90246A, sc-90246B and sc-90246C.

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

PSTPIP1 siRNA (h) is recommended for the inhibition of PSTPIP1 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

PSTPIP1 (B-10): sc-390727 is recommended as a control antibody for monitoring of PSTPIP1 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PSTPIP1 gene expression knockdown using RT-PCR Primer: PSTPIP1 (h)-PR: sc-90246-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. Starnes, T.W., et al. 2014. The F-BAR protein PSTPIP1 controls extracellular matrix degradation and filopodia formation in macrophages. Blood 123: 2703-2714.

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.