



BDP1 siRNA (h): sc-106797

BACKGROUND

Protein tyrosine phosphorylation plays a key role in the regulation of several fundamental cellular processes, including cell growth, migration and differentiation. The regulation of phosphorylation is controlled by the opposing actions of protein tyrosine kinases and protein tyrosine phosphatase. BDP1 (brain derived phosphatase 1) is a member of the PEST protein tyrosine phosphatase family. The expression of BDP1 is not limited to the brain, but is also detectable in colon and several tumor-derived cell lines. BDP1 has been shown to differentially dephosphorylate autophosphorylated tyrosine kinases, such as src and EGFR, that are overexpressed in tumor tissues.

REFERENCES

1. Lowenstein, E.J., et al. 1992. The SH2 and SH3 domain-containing protein GRB2 links receptor tyrosine kinases to ras signaling. *Cell* 70: 431-442.
2. Walton, K.M., et al. 1993. Protein tyrosine phosphatases. *Annu. Rev. Biochem.* 62: 101-120.
3. Kim, Y.W., et al. 1996. Characterization of the PEST family protein tyrosine phosphatase BDP1. *Oncogene* 13: 2275-2279.
4. Tamir, I., et al. 1998. Antigen receptor signaling: integration of protein tyrosine kinase functions. *Oncogene* 17: 1353-1364.
5. Van Vactor, D., et al. 1998. Genetic analysis of protein tyrosine phosphatases. *Curr. Opin. Genet. Dev.* 8: 112-126.
6. Gensler, M., et al. 2004. Negative regulation of HER2 signaling by the PEST-type protein-tyrosine phosphatase BDP1. *J. Biol. Chem.* 279: 12110-12116.
7. Gandhi, T.K., et al. 2005. A bioinformatics analysis of protein tyrosine phosphatases in humans. *DNA Res.* 12: 79-89.
8. Guimarães, G.S., et al. 2006. Identification of candidates for tumor-specific alternative splicing in the thyroid. *Genes Chromosomes Cancer* 45: 540-553.

CHROMOSOMAL LOCATION

Genetic locus: PTPN18 (human) mapping to 2q21.1.

PRODUCT

BDP1 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 BDP1 shRNA Plasmid (h): sc-106797-SH and BDP1 shRNA (h) Lentiviral Particles: sc-106797-V as alternate gene silencing products.

For independent verification of BDP1 (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-106797A, sc-106797B and sc-106797C.

PROTOCOLS

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

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

BDP1 siRNA (h) is recommended for the inhibition of BDP1 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

BDP1 (B-6): sc-515058 is recommended as a control antibody for monitoring of BDP1 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 λ BP-HRP: sc-516132 or m-IgG λ BP-HRP (Cruz Marker): sc-516132-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 λ BP-FITC: sc-516185 or m-IgG λ BP-PE: sc-516186 (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 BDP1 gene expression knockdown using RT-PCR Primer: BDP1 (h)-PR: sc-106797-PR (20 μ l). 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.