



DEP-1 siRNA (h): sc-35189

BACKGROUND

Density-enhanced phosphatase-1 (DEP-1), a receptor-like protein tyrosine phosphatase, also known as HPTP- η /CD148, is involved in signal transduction in leukocytes and in the mechanisms of cellular differentiation. DEP-1 consists of an extracellular segment containing eight Fibronectin type III repeats, a single transmembrane segment and a single intracellular PTP domain. In lymphoid organs, DEP-1 is widely expressed on B and T cells, granulocytes, macrophages, certain dendritic cells, mature thymocytes and neutrophils. In non-lymphoid tissues, it is expressed on fibrocytes, melanocytes and Schwann cells, and many epithelial cell types with glandular and/or endocrine differentiation. In Jurkat T cells, DEP-1 inhibits TCR-mediated activation, which results in reduced expression of the early activation of Ag CD69, inhibition of tyrosine phosphorylation of many intracellular proteins, including tyrosine kinase ZAP-70 and impairment of mitogen-activated protein kinase activation. In spite of its intrinsic enzymatic activity, DEP-1 can induce protein tyrosine phosphorylation in human lymphocytes, and serine/threonine and/or tyrosine phosphorylation in tumor cell lines.

REFERENCES

1. Ostman, A., et al. 1994. Expression of DEP-1, a receptor-like protein tyrosine phosphatase, is enhanced with increasing cell density. *Proc. Natl. Acad. Sci. USA* 91: 9680-9684.
2. Honda, H., et al. 1994. Molecular cloning, characterization, and chromosomal localization of a novel protein tyrosine phosphatase, HPTA- η . *Blood* 84: 4186-4194.

CHROMOSOMAL LOCATION

Genetic locus: PTPRJ (human) mapping to 11p11.2.

PRODUCT

DEP-1 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 DEP-1 shRNA Plasmid (h): sc-35189-SH and DEP-1 shRNA (h) Lentiviral Particles: sc-35189-V as alternate gene silencing products.

For independent verification of DEP-1 (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-35189A, sc-35189B and sc-35189C.

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

DEP-1 siRNA (h) is recommended for the inhibition of DEP-1 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

DEP-1 (F-12): sc-376794 is recommended as a control antibody for monitoring of DEP-1 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 DEP-1 gene expression knockdown using RT-PCR Primer: DEP-1 (h)-PR: sc-35189-PR (20 μ l, 571 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Chung, J.S., et al. 2011. Inhibition of T-cell activation by Syndecan-4 is mediated by CD148 through protein tyrosine phosphatase activity. *Eur. J. Immunol.* 41: 1794-1799.
2. Sun, Y., et al. 2020. CD148 serves as a prognostic marker of gastric cancer and hinders tumor progression by dephosphorylating EGFR. *J. Cancer* 11: 2667-2678.

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.