

PE-1 siRNA (h): sc-88114

BACKGROUND

PE-1 (PU-Ets related-1), also known as ETV3 (ETS translocation variant 3) or METS (Mitogenic Ets transcriptional suppressor), belongs to the ETS family of transcription factors and functions as a transcriptional repressor. ETS family members share a highly conserved DNA binding domain and play a role in growth factor pathways regulating proliferation and differentiation. PE-1 is ubiquitously expressed and localizes to the nucleus. Its expression can be induced by IL-10 via the STAT3 pathway suggesting that PE-1 contributes to the IL-10 downstream anti-inflammatory effects. During terminal cell differentiation, PE-1 plays a role in growth arrest by specifically repressing the target genes that are involved in Ras-dependent proliferation. The contributions of PE-1 to these anti-proliferative effects are heavily dependent on its interaction with Gemin3. Two PE-1 isoforms exist due to alternative splicing events.

REFERENCES

1. Klemsz, M., Hromas, R., Raskind, W., Bruno, E. and Hoffman, R. 1994. PE-1, a novel ETS oncogene family member, localizes to chromosome 1q21-q23. *Genomics* 20: 291-294.
2. de Castro, C.M., Rabe, S.M., Langdon, S.D., Fleenor, D.E., Slentz-Kesler, K., Ahmed, M.N., Qumsiyeh, M.B. and Kaufman, R.E. 1997. Genomic structure and chromosomal localization of the novel ETS factor, PE-2 (ERF). *Genomics* 42: 227-235.
3. Bidder, M., Loewy, A.P., Latifi, T., Newberry, E.P., Ferguson, G., Willis, D.M. and Towler, D.A. 2000. Ets domain transcription factor PE1 suppresses human interstitial collagenase promoter activity by antagonizing protein-DNA interactions at a critical AP1 element. *Biochemistry* 39: 8917-8928.
4. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 164873. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Sawka-Verhelle, D., Escoubet-Lozach, L., Fong, A.L., Hester, K.D., Herzig, S., Lebrun, P. and Glass, C.K. 2004. PE-1/METS, an antiproliferative Ets repressor factor, is induced by CREB-1/CREM-1 during macrophage differentiation. *J. Biol. Chem.* 279: 17772-17784.
6. El Kasmi, K.C., Smith, A.M., Williams, L., Neale, G., Panopolous, A., Watowich, S.S., Häcker, H., Foxwell, B.M. and Murray, P.J. 2007. Cutting edge: A transcriptional repressor and corepressor induced by the STAT3-regulated anti-inflammatory signaling pathway. *J. Immunol.* 179: 7215-7219.
7. Hester, K.D., Verhelle, D., Escoubet-Lozach, L., Luna, R., Rose, D.W. and Glass, C.K. 2007. Differential repression of c-Myc and cdc2 gene expression by ERF and PE-1/METS. *Cell Cycle* 6: 1594-1604.

CHROMOSOMAL LOCATION

Genetic locus: ETV3 (human) mapping to 1q23.1.

PROTOCOLS

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

PRODUCT

PE-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 PE-1 shRNA Plasmid (h): sc-88114-SH and PE-1 shRNA (h) Lentiviral Particles: sc-88114-V as alternate gene silencing products.

For independent verification of PE-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-88114A, sc-88114B and sc-88114C.

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

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

PE-1 (ETV3F4D10): sc-81084 is recommended as a control antibody for monitoring of PE-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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PE-1 gene expression knockdown using RT-PCR Primer: PE-1 (h)-PR: sc-88114-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.