

PEA3 siRNA (h): sc-36205

BACKGROUND

Several members of the Ets gene family are known to encode sequence-specific DNA binding proteins. These include mouse PU.1, mouse and human Ets-1, *Drosophila* E74, chicken and human Ets-2 and rat GABP- α . Each of these proteins recognizes similar motifs in DNA that share a centrally located 5'-GGAA-3' element. For instance, PEA3 binds the motif 5'-AGGAAG-3' (the PEA-3 motif), but does not bind to the sequence 5'-AGGAAC-3', recognized by PU.1, although PU.1 binds equally well to both sequences. It appears that all of the Ets proteins recognize the same central core sequence but that each protein interacts with unique sequences that flank this core. PEA3 is expressed at readily detectable levels in cells of epithelial and fibroblastic origin but is not expressed in hematopoietic cells. This is in contrast to other members of the Ets gene family, such as Ets-1, Ets-2 and Fli-1, each of which is expressed primarily in cells of hematopoietic origin.

REFERENCES

1. Ghysdael, J., et al. 1986. Identification and preferential expression in thymic and bursal lymphocytes of a c-Ets oncogene-encoded M_r 54,000 cytoplasmic protein. *Proc. Natl. Acad. Sci. USA* 83: 1714-1718.
2. Rao, V.N., et al. 1987. Erg, a human Ets-related gene on chromosome 21: alternative splicing, polyadenylation, and translation. *Science* 237: 635-639.
3. Rao, V.N., et al. 1989. Elk, tissue-specific Ets-related genes on chromosomes X and 14 near translocation breakpoints. *Science* 244: 66-70.
4. Burtis, K.C., et al. 1990. The *Drosophila* 74EF early puff contains E74, a complex ecdysone-inducible gene that encodes two Ets-related proteins. *Cell* 61: 85-99.

CHROMOSOMAL LOCATION

Genetic locus: ETV4 (human) mapping to 17q21.31.

PRODUCT

PEA3 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 PEA3 shRNA Plasmid (h): sc-36205-SH and PEA3 shRNA (h) Lentiviral Particles: sc-36205-V as alternate gene silencing products.

For independent verification of PEA3 (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-36205A, sc-36205B and sc-36205C.

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

PEA3 siRNA (h) is recommended for the inhibition of PEA3 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

PEA3 (G-10): sc-166629 is recommended as a control antibody for monitoring of PEA3 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 PEA3 gene expression knockdown using RT-PCR Primer: PEA3 (h)-PR: sc-36205-PR (20 μ l, 448 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wu, J.Y., et al. 2006. Balance between polyoma enhancing activator 3 and activator protein 1 regulates *Helicobacter pylori*-stimulated matrix metalloproteinase 1 expression. *Cancer Res.* 66: 5111-5120.
2. Ratovitski, E.A. 2010. LKB1/PEA3/ Δ Np63 pathway regulates PTGS-2 (COX-2) transcription in lung cancer cells upon cigarette smoke exposure. *Oxid. Med. Cell. Longev.* 3: 317-324.
3. Clementz, A.G., et al. 2011. NOTCH-1 and NOTCH-4 are novel gene targets of PEA3 in breast cancer: novel therapeutic implications. *Breast Cancer Res.* 13: R63.

RESEARCH USE

For research use only, not for use in diagnostic procedures.