SANTA CRUZ BIOTECHNOLOGY, INC.

Egr-3 siRNA (h): sc-35268

BACKGROUND

Egr-1, Egr-2, Egr-3 and Egr-4 are nuclear transcription factors belonging to the Egr C_2H_2-type zinc-finger protein family and containing three C_2H_2-type zinc fingers. As immediate early proteins, Egr transcription factors are rapidly induced by diverse extracellular stimuli. They are subject to tight differential control through diverse mechanisms at several levels of regulation: transcriptional; translational and posttranslational (including glycosylation, phosphorylation and redox) mechanisms; and protein-protein interaction. Egr-3 is involved in muscle spindle development and is expressed in T cells 20 minutes following activation.

REFERENCES

1. Beckmann, A.M. and Wilce, P.A. 1997. Egr transcription factors in the nervous system. Neurochem. Int. 31: 477-510.
2. Zipfel, P.F., et al. 1997. The human zinc finger protein Egr-4 acts as autoregulatory transcriptional repressor. Biochim. Biophys. Acta 1354: 134-144.
3. O'Donvan, K.J., et al. 1998. Sequential expression of Egr-1 and Egr-3 in hippocampal granule cells following electroconvulsive stimulation. J. Neurochem. 70: 1241-1248.
4. Mittelstadt, P.R., et al 1998. Cyclosporin A-sensitive transcription factor Egr-3 regulates Fas ligand expression. Mol. Cell. Biol. 18: 3744-3751.

CHROMOSOMAL LOCATION

Genetic locus: EGR3 (human) mapping to 8p21.3.

PRODUCT

Egr-3 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 Egr-3 shRNA Plasmid (h): sc-35268-SH and Egr-3 shRNA (h) Lentiviral Particles: sc-35268-V as alternate gene silencing products.

For independent verification of Egr-3 (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-35268A, sc-35268B and sc-35268C.

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

Egr-3 siRNA (h) is recommended for the inhibition of Egr-3 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

Egr-3 (A-7): sc-390967 is recommended as a control antibody for monitoring of Egr-3 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 Egr-3 gene expression knockdown using RT-PCR Primer: Egr-3 (h)-PR: sc-35268-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. Hinze, A.V., et al. 2012. Adenosine A_3 receptor-induced proliferation of primary human coronary smooth muscle cells involving the induction of early growth response genes. J. Mol. Cell. Cardiol. 53: 639-645.
2. To, S.Q., et al. 2013. Involvement of early growth response factors in TNFα-induced aromatase expression in breast adipose. Breast Cancer Res. Treat. 138: 193-203.
3. Kang, Z., et al. 2014. Curculigoside A induces angiogenesis through VCAM-1/Egr-3/CREB/VEGF signaling pathway. Neuroscience 267: 232-240.
4. Dong, Z., et al. 2018. Sulphonated formononetin induces angiogenesis through vascular endothelial growth factor/cAMP response element-binding protein/early growth response 3/vascular cell adhesion molecule 1 and Wnt/β-catenin signaling pathway. Pharmacology 101: 76-85.

RESEARCH USE

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