

E4BP4 siRNA (h): sc-37821

BACKGROUND

E4BP4, also known as NFIL3, functions as a transcriptional repressor and is a member of the basic leucine zipper (bZIP) transcription factor family. E4BP4 binds with high specificity to the E4 ATF, which is a DNA sequence traditionally targeted by the ATF/CREB family of transcription factors. A 65 amino acid segment located in the carboxy-terminus of E4BP4 interacts specifically with the TBP binding protein Dr1. In the suprachiasmatic nucleus, circadian center and liver, E4BP4 competes with PAR proteins for DNA binding via a reciprocating mechanism. The phase expression of E4BP4 correlates with the circadian cycle and represses transcription of genes otherwise activated by PAR transcription regulators. E4BP4 also plays an important role in an IL-3-mediated signaling pathway that is responsible for the survival of B cell progenitors. The gene encoding human E4BP4 maps to chromosome 9q22.31.

REFERENCES

1. Cowell, I.G., et al. 1992. Transcriptional repression by a novel member of the bZIP family of transcription factors. *Mol. Cell. Biol.* 12: 3070-3077.
2. Cowell, I.G., et al. 1994. Transcriptional repression by the human bZIP factor E4BP4: definition of a minimal repression domain. *Nucleic Acids Res.* 22: 59-65.
3. Cowell, I.G., et al. 1996. Protein-protein interaction between the transcriptional repressor E4BP4 and the TBP-binding protein Dr1. *Nucleic Acids Res.* 24: 3607-3613.
4. Ikushima, S., et al. 1997. Pivotal role for the NFIL3/E4BP4 transcription factor in interleukin-3-mediated survival of pro-B lymphocytes. *Proc. Natl. Acad. Sci. USA* 94: 2609-2614.

CHROMOSOMAL LOCATION

Genetic locus: NFIL3 (human) mapping to 9q22.31.

PRODUCT

E4BP4 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 E4BP4 shRNA Plasmid (h): sc-37821-SH and E4BP4 shRNA (h) Lentiviral Particles: sc-37821-V as alternate gene silencing products.

For independent verification of E4BP4 (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-37821A, sc-37821B and sc-37821C.

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

E4BP4 siRNA (h) is recommended for the inhibition of E4BP4 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

E4BP4 (A-9): sc-74415 is recommended as a control antibody for monitoring of E4BP4 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 E4BP4 gene expression knockdown using RT-PCR Primer: E4BP4 (h)-PR: sc-37821-PR (20 μ l, 561 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Silvestris, F., et al. 2008. Negative regulation of the osteoblast function in multiple myeloma through the repressor gene E4BP4 activated by malignant plasma cells. *Clin. Cancer Res.* 14: 6081-6091.
2. Pazdrak, K., et al. 2016. Eosinophil resistance to glucocorticoid-induced apoptosis is mediated by the transcription factor NFIL3. *Apoptosis* 21: 421-431.

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.