

ITF-2 siRNA (h): sc-61657

BACKGROUND

Immunoglobulin transcription factor 2 (ITF-2), also designated transcription factor and SL3-3 enhancer factor 2 (SEF-2) is a basic helix-turn-helix transcription factor. ITF-2 binds to the immunoglobulin enhancer Mu-E5/KE5-motif and to the Ephrussi-box (E-box) element present in SSTR2-1NR and serves as an activator of transcription in muscle-specific genes. ITF-2 preferentially binds to either 5'-ACANNTGT-3' or 5'-CCANNTGG-3'. ITF-2 belongs to the class of simple bHLH transcription factors identified as ubiquitous E-box binding factors, which also includes the E2A gene products (E12 and E47) and HEB. The protein is expressed in adult heart, brain, placenta, skeletal muscle and embryonic brain. ITF-2 forms homo- or hetero-oligomers with myogenin and MyoD; alternatively spliced isoforms of ITF-2 function to activate or repress their transcription.

REFERENCES

1. Henthorn, P., et al. 1990. Sequence of the cDNA encoding ITF-2, a positive-acting transcription factor. *Nucleic Acids Res.* 18: 678.
2. Henthorn, P., et al. 1990. Two distinct transcription factors that bind the immunoglobulin enhancer microE5/ κ 2 motif. *Science* 247: 467-470.
3. French, B.A., et al. 1991. Heterodimers of myogenic helix-loop-helix regulatory factors and E12 bind a complex element governing myogenic induction of the avian cardiac α -Actin promoter. *Mol. Cell. Biol.* 11: 2439-2450.
4. Corneliusen, B., et al. 1991. Helix-loop-helix transcriptional activators bind to a sequence in glucocorticoid response elements of retrovirus enhancers. *J. Virol.* 65: 6084-6093.

CHROMOSOMAL LOCATION

Genetic locus: TCF4 (human) mapping to 18q21.2.

PRODUCT

ITF-2 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 ITF-2 shRNA Plasmid (h): sc-61657-SH and ITF-2 shRNA (h) Lentiviral Particles: sc-61657-V as alternate gene silencing products.

For independent verification of ITF-2 (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-61657A, sc-61657B and sc-61657C.

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

ITF-2 siRNA (h) is recommended for the inhibition of ITF-2 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

ITF-2 (C-8): sc-393407 is recommended as a control antibody for monitoring of ITF-2 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 ITF-2 gene expression knockdown using RT-PCR Primer: ITF-2 (h)-PR: sc-61657-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Luo, C., et al. 2016. A PGC1 α -mediated transcriptional axis suppresses melanoma metastasis. *Nature* 537: 422-426.
2. Fang, X.Q., et al. 2022. PGC1 α cooperates with FOXA1 to regulate epithelial mesenchymal transition through the TCF4-TWIST1. *Int. J. Mol. Sci.* 23: 8247.

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.