SANTA CRUZ BIOTECHNOLOGY, INC.

USF-2 siRNA (m): sc-36785

BACKGROUND

The ubiquitously expressed cellular upstream stimulatory factor (USF) consists of USF-1 and USF-2 polypeptides which independently exhibit site-specific DNA binding and are members of the c-Myc-related family of regulatory factors containing helix-loop-helix domains. USF also contains a leucine repeat that is required for efficient DNA binding. USF was originally identified as an upstream stimulatory factor that binds the core sequence CACGTG in the adenovirus late promoter. These findings, together with the demonstration of cooperative interaction between USF and the initiator-binding protein, TFII-I, raises the possibility of a more general involvement of USF in transcriptional regulation. While expression of both USF-1 and USF-2 species is ubiquitous, different ratios of USF homo- and heterodimers are found in different cell types.

REFERENCES

1. Sawadogo, M., et al. 1985. Inter-action of a gene-specific transcription factor with the adenovirus major late promoter upstream of the TATA box region. Cell 43: 165-175.
2. Carthew, R.W., et al. 1985. An RNA polymerase II transcription factor binds to an upstream element in the adenovirus major late promoter. Cell 43: 439-448.
3. Sawadogo, M., et al. 1988. Multiple forms of the human gene-specific transcription factor USF-1. Complete purification and identification of USF from HeLa cell nuclei. J. Biol. Chem. 263: 11985-11993.
4. Beckmann, H., et al. 1991. The leucine zipper of TFE3 dictates helix-loop-helix dimerization specificity. Genes Dev. 5: 1057-1066.

CHROMOSOMAL LOCATION

Genetic locus: Usf2 (mouse) mapping to 7 B1.

PRODUCT

USF-2 siRNA (m) 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 USF-2 shRNA Plasmid (m): sc-36785-SH and USF-2 shRNA (m) Lentiviral Particles: sc-36785-V as alternate gene silencing products.

For independent verification of USF-2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-36785A, sc-36785B and sc-36785C.

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

USF-2 siRNA (m) is recommended for the inhibition of USF-2 expression in mouse 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

USF-2 (5E9): sc-293443 is recommended as a control antibody for monitoring of USF-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-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 USF-2 gene expression knockdown using RT-PCR Primer: USF-2 (m)-PR: sc-36785-PR (20 µl, 401 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Krones, A., et al. 2001. Cross-talk between the signals hypoxia and glucose at the glucose response element of the L-type pyruvate kinase gene. Endocrinology 142: 2707-2718.
2. Mazaud Guittot, S., et al. 2007. The proximal Gata4 promoter directs reporter gene expression to sertoli cells during mouse gonadal development. Biol. Reprod. 76: 85-95.

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.