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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

SANTA CRUZ BIOTECHNOLOGY, INC.

FBP1 siRNA (m): sc-44829

BACKGROUND

Activation of FUSE, the far upstream element, is required for the proper expression of the mammalian gene c-Myc in undifferentiated cells. The binding of FBP1 (FUSE-binding protein or far upstream element-binding protein) to FUSE is necessary for c-Myc expression, indicating that FBP1 functions as a growth-dependent regulator of c-Myc expression. Isolated from proliferating HL-60 cells, FBP1 (FBP), FBP2 and FBP3 comprise a family of single-stranded DNA-binding proteins that specifically bind to FUSE elements. The FBP transcription factors share a conserved central DNA-binding domain and show significant homology in their carboxyl-terminal activation domains. Expression of FBP1 is detected in undifferentiated cells and is substantially decreased following cellular differentiation.

REFERENCES

1. Avigan, M.I., et al. 1990. A far upstream element stimulates c-Myc expression in undifferentiated leukemia cells. J. Biol. Chem. 265: 18538-18545.
2. Duncan, R., et al. 1994. A sequence-specific, single-strand binding protein activates the far upstream element of c-Myc and defines a new DNA-binding motif. Genes Dev. 8: 465-480.
3. Bazar, L., et al. 1995. A transactivator of c-Myc is coordinately regulated with the proto-oncogene during cellular growth. Oncogene 10: 2229-2238.
4. Davis-Smyth, T., et al. 1996. The far upstream element-binding proteins comprise an ancient family of single-strand DNA-binding transactivators. J. Biol. Chem. 271: 31679-31687.
5. Michelotti, G.A., et al. 1996. Multiple single-stranded *cis* elements are associated with activated chromatin of the human c-Myc gene *in vivo.* Mol. Cell. Biol. 16: 2656-2669.
6. Rehbein, M., et al. 2002. Molecular characterization of MARTA1, a protein interacting with the dendritic targeting element of MAP2 mRNAs. J. Neurochem. 82: 1039-1046.
7. Braddock, D.T., et al. 2002. Structure and dynamics of KH domains from FBP bound to single-stranded DNA. Nature 415: 1051-1056.

CHROMOSOMAL LOCATION

Genetic locus: Fubp1 (mouse) mapping to 3 H3.

PRODUCT

FBP1 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 FBP1 shRNA Plasmid (m): sc-44829-SH and FBP1 shRNA (m) Lentiviral Particles: sc-44829-V as alternate gene silencing products.

For independent verification of FBP1 (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-44829A, sc-44829B and sc-44829C.

RESEARCH USE

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

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

FBP1 siRNA (m) is recommended for the inhibition of FBP1 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

FBP1 (G-8): sc-271241 is recommended as a control antibody for monitoring of FBP1 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 FBP1 gene expression knockdown using RT-PCR Primer: FBP1 (m)-PR: sc-44829-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.