

JKTBP siRNA (m): sc-105585

BACKGROUND

Heterogeneous nuclear ribonucleoproteins (hnRNPs) constitute a set of polypeptides that contribute to mRNA transcription and pre-mRNA processing, as well as mature mRNA transport to the cytoplasm and translation. There are approximately 20 known hnRNP proteins, and their complexes are the major constituents of the spliceosome. The majority of hnRNP protein components are localized to the nucleus, however some shuttle between the nucleus and the cytoplasm. JKTBP (JKT41-binding protein), also known as HNRPD (heterogeneous nuclear ribonucleoprotein D-like), is a 420 amino acid hnRNP that shuttles between the nucleus and the cytoplasm and contains two RRM (RNA recognition motif) domains. Expressed in a variety of tissues, including liver, brain, lung, placenta, kidney, spleen, testis, thymus, ovary and skeletal muscle, JKTBP functions as a transcriptional regulator that binds to both single- and double-stranded DNA and is capable of both enhancing and repressing transcriptional activity. Multiple isoforms of JKTBP exist due to alternative splicing events.

REFERENCES

1. Doi, A., et al. 1998. Molecular cloning of the cDNA encoding A + U-rich element RNA binding factor. *Biochim. Biophys. Acta* 1396: 51-56.
2. Tsuchiya, N., et al. 1998. Cloning and characterization of a cDNA encoding a novel heterogeneous nuclear ribonucleoprotein-like protein and its expression in myeloid leukemia cells. *J. Biochem.* 123: 499-507.
3. Kamei, D., et al. 1999. Two forms of expression and genomic structure of the human heterogeneous nuclear ribonucleoprotein D-like JKTBP gene (HNRPD). *Gene* 228: 13-22.
4. Kawamura, H., et al. 2002. Identification of the nucleocytoplasmic shuttling sequence of heterogeneous nuclear ribonucleoprotein D-like protein JKTBP and its interaction with mRNA. *J. Biol. Chem.* 277: 2732-2739.
5. Boopathi, E., et al. 2004. Regulation of murine cytochrome c oxidase Vb gene expression during myogenesis: YY-1 and heterogeneous nuclear ribonucleoprotein D-like protein (JKTBP1) reciprocally regulate transcription activity by physical interaction with the BERF-1/ZBP-89 factor. *J. Biol. Chem.* 279: 35242-35254.
6. Reboll, M.R., et al. 2007. NRF IRES activity is mediated by RNA binding protein JKTBP1 and a 14-nt RNA element. *RNA* 13: 1328-1340.

CHROMOSOMAL LOCATION

Genetic locus: Hnrpd (mouse) mapping to 5 E4.

PRODUCT

JKTBP 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see JKTBP shRNA Plasmid (m): sc-105585-SH and JKTBP shRNA (m) Lentiviral Particles: sc-105585-V as alternate gene silencing products.

For independent verification of JKTBP (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-105585A, sc-105585B and sc-105585C.

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

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

pan hnRNP (C-6): sc-166577 is recommended as a control antibody for monitoring of JKTBP 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 JKTBP gene expression knockdown using RT-PCR Primer: JKTBP (m)-PR: sc-105585-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.