SANTA CRUZ BIOTECHNOLOGY, INC.

GABP-β1 siRNA (m): sc-145304

BACKGROUND

The transcription factor GA-binding protein (GABP) is composed of two subunits, the Ets-related GABP-α and a GABP-α-associated subunit, GABPβ. GABPα binds to a specific DNA sequence and GABPβ exists as β1 and β2 splice variants that differ in their C-termini. In primary neuronal cultures, GABPβ is expressed in both the cytoplasm and the nucleus, whereas GABPα is expressed mainly in the nucleus. GABP is constitutively expressed as either a GABPαβ heterodimer or a GABPαβ heterotetramer, both of which can modify GABP-dependent transcription *in vitro* and *in vivo*. The GABPαβ tetrameric complex performs many different functions, such as stimulating transcription of the adenovirus E4 gene, differentially activating BRCA1 expression in human breast cell lines, potentiating Tat-mediated activation of long terminal repeat promoter transcription and viral replication in certain cell types, acting as a coordinator of mitochrondrial and nuclear transcription for cytochrome oxidase in neurons and assisting in the regulation of rpL32 gene transcription.

REFERENCES

1. Martin, M.E., et al. 1996. Redox regulation of GA-binding protein-α DNA binding activity. J. Biol. Chem. 271: 25617-25623.
2. Suzuki, F., et al. 1998. Functional interactions of transcription factor human GA-binding protein subunits. J. Biol. Chem. 273: 29302-29308.
3. Sawada, J., et al. 1999. Synergistic transcriptional activation by hGABP and select members of the activation transcription factor/cAMP response element-binding protein family. J. Biol. Chem. 274: 35475-35482.
4. Verhoef, K., et al. 1999. Evolution of the human immunodeficiency virus type 1 long terminal repeat promoter by conversion of an NFκB enhancer element into a GABP binding site. J. Virol. 73: 1331-1340.
5. Hoare, S., et al. 1999. Identification of a GABP α/β binding site involved in the induction of oxytocin receptor gene expression in human breast cells, potentiation by c-Fos/c-Jun. Endocrinology 140: 2268-2279.
6. Atlas, E., et al. 2000. GA-binding protein α/β is critical regulator of the BRCA1 promoter. Oncogene 19: 1933-1940.
7. Chinenov, Y., et al. 2000 The α and β subunits of the GA-binding protein form a stable heterodimer in solution. Revised model of heterotetrameric complex assembly. J. Biol. Chem. 275: 7749-7756.
8. Zhang, C., et al. 2000. Depolarizing stimulation upregulates GA-binding protein in neurons: a transcription factor involved in the bigenomic expression of cytochrome oxidase subunits. Eur. J. Neurosci. 12: 1013-1023.
9. O'Leary, D.A., et al. 2005. Identification and expression analysis of alternative transcripts of the mouse GA-binding protein (GABP) subunits α and β1. Gene 344: 79-92.

CHROMOSOMAL LOCATION

Genetic locus: Gabpb1 (mouse) mapping to 2 F1.

PROTOCOLS

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

PRODUCT

GABP-β1 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 GABP-β1 shRNA Plasmid (m): sc-145304-SH and GABP-β1 shRNA (m) Lentiviral Particles: sc-145304-V as alternate gene silencing products.

For independent verification of GABP-β1 (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-145304A, sc-145304B and sc-145304C.

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

GABP-β1 siRNA (m) is recommended for the inhibition of GABP-β1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GABP-β1 gene expression knockdown using RT-PCR Primer: GABP-β1 (m)-PR: sc-145304-PR (20 µl). 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.