SANTA CRUZ BIOTECHNOLOGY, INC.

C/EBP δ siRNA (m): sc-37723

BACKGROUND

The transcription factor C/EBP α (CCAAT-enhancer binding protein) is a heat-stable, sequence-specific DNA-binding protein first purified from rat liver nuclei that binds avidly to several different *cis*-regulatory DNA sequences commonly associated with viral and cellular genes transcribed by RNA polymerase II. C/EBP α regulates gene expression in a variety of tissues including liver, adipose, lung and intestine. C/EBP α uses a bipartite structural motif to bind DNA. Two protein chains dimerize through a set of amphipathic α helices termed the leucine zipper. Highly basic polypeptide regions emerge from the zipper to form a linked set of DNA contact surfaces. C/EBP α appears to function exclusively in terminally differentiated, growth-arrested cells. Additional family members include C/EBP β, C/EBP γ, C/EBP δ and C/EBP ε, all of which exhibit similar DNA-binding specificities and affinities to C/EBP α. Furthermore, C/EBP β and C/EBP δ readily form heterodimers both with each other as well as with C/EBP α.

REFERENCES

1. Johnson, P.F., et al. 1987. Identification of a rat liver nuclear protein that binds to the enhancer core element of three animal viruses. Genes Dev. 1: 133-146.
2. Landschulz, W.H., et al. 1988. Isolation of a recombinant copy of the gene encoding C/EBP. Genes Dev. 2: 786-800.
3. Birkenmeier, E.H., et al. 1989. Tissue-specific expression, developmental regulation, and genetic mapping of the gene encoding CCAAT/enhancer binding protein. Genes Dev. 3: 1146-1156.
4. Umek, R.M., et al. 1991. CCAAT-enhancer binding protein: a component of a differentiation switch. Science 251: 288-292.

CHROMOSOMAL LOCATION

Genetic locus: Cebpd (mouse) mapping to 16 A2.

PRODUCT

C/EBP δ 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 C/EBP δ shRNA Plasmid (m): sc-37723-SH and C/EBP δ shRNA (m) Lentiviral Particles: sc-37723-V as alternate gene silencing products.

For independent verification of C/EBP δ (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-37723A, sc-37723B and sc-37723C.

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

C/EBP δ siRNA (m) is recommended for the inhibition of C/EBP δ 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

C/EBP δ (D-1): sc-515028 is recommended as a control antibody for monitoring of C/EBP δ 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor C/EBP δ gene expression knockdown using RT-PCR Primer: C/EBP δ (m)-PR: sc-37723-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Guha, M., et al. 2009. Heterogeneous nuclear ribonucleoprotein A2 is a common transcriptional coactivator in the nuclear transcription response to mitochondrial respiratory stress. Mol. Biol. Cell 20: 4107-4119.
2. Armengol, J., et al. 2012. Pref-1 in brown adipose tissue: specific involvement in brown adipocyte differentiation and regulatory role of C/EBP δ. Biochem. J. 443: 799-810.
3. Yan, C., et al. 2012. C5a-regulated CCAAT/enhancer-binding proteins β and δ are essential in Fcγ receptor-mediated inflammatory cytokine and chemokine production in macrophages. J. Biol. Chem. 287: 3217-3230.
4. Yan, C., et al. 2013. CCAAT/enhancer-binding protein δ is a critical mediator of lipopolysaccharide-induced acute lung injury. Am. J. Pathol. 182: 420-430.
5. Guha, M., et al. 2016. Enhanced osteoclastogenesis by mitochondrial retrograde signaling through transcriptional activation of the cathepsin K gene. Ann. N.Y. Acad. Sci. 1364: 52-61.

RESEARCH USE

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