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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](https://www.linkedin.com/company/szaboscandic) 

EF-CAB1 siRNA (m): sc-143300

BACKGROUND

Made up of nearly 146 million bases, chromosome 8 encodes about 800 genes. Translocation of portions of chromosome 8 with amplifications of the c-Myc gene are found in some leukemias and lymphomas, and are typically associated with a poor prognosis. Portions of chromosome 8 have been linked to schizophrenia and bipolar disorder. Chromosome 8 is also associated with Pfeiffer syndrome, congenital hypothyroidism and Waardenburg syndrome. The gene encoding EF-CAB1 (EF-hand calcium-binding domain-containing peptide protein 1) is located on the long arm of chromosome 8. This 211 amino acid protein contains three EF-hand domains, which are helix-loop-helix structures that are usually found in calcium binding proteins. Other well-studied calcium binding proteins that contain EF-hand motifs include calmodulin (CaM), Troponin C, myosin regulatory light chain (MYL) and S-100 proteins.

REFERENCES

1. Heutink, P., et al. 1995. The genetic background of craniosynostosis syndromes. *Eur. J. Hum. Genet.* 3: 312-323.
2. Beyer, V., et al. 2005. Polysomy 8 defines a clinico-cytogenetic entity representing a subset of myeloid hematologic malignancies associated with a poor prognosis: report on a cohort of 12 patients and review of 105 published cases. *Cancer Genet. Cytogenet.* 160: 97-119.
3. Morgan, R.O., et al. 2006. Deciphering function and mechanism of calcium-binding proteins from their evolutionary imprints. *Biochim. Biophys. Acta* 1763: 1238-1249.
4. Lakowski, T.M., et al. 2007. Peptide binding by a fragment of calmodulin composed of EF-hands 2 and 3. *Biochemistry* 46: 8525-8536.
5. Capozzi, F., et al. 2007. Essential dynamics of helices provide a functional classification of EF-hand proteins. *J. Proteome Res.* 6: 4245-4255.

CHROMOSOMAL LOCATION

Genetic locus: Efcab1 (mouse) mapping to 16 A1.

PRODUCT

EF-CAB1 siRNA (m) is a pool of 2 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 EF-CAB1 shRNA Plasmid (m): sc-143300-SH and EF-CAB1 shRNA (m) Lentiviral Particles: sc-143300-V as alternate gene silencing products.

For independent verification of EF-CAB1 (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-143300A and sc-143300B.

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.

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

EF-CAB1 siRNA (m) is recommended for the inhibition of EF-CAB1 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

EF-CAB1 (B-2): sc-515554 is recommended as a control antibody for monitoring of EF-CAB1 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 EF-CAB1 gene expression knockdown using RT-PCR Primer: EF-CAB1 (m)-PR: sc-143300-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.