

CaBP4 siRNA (h): sc-105173

BACKGROUND

The calcium binding protein (CaBP) family shares much similarity to calmodulin. It has been shown that CaBP proteins can substitute functionally for, and probably augment the function of, calmodulin. Calcium binding proteins are a crucial part of calcium mediated cellular signal transduction in the central nervous system. There are several members of the family with varying expression patterns. CaBP1 and CaBP2 can be expressed as multiple, alternatively spliced variants in brain and retina. CaBP3, CaBP4 and CaBP5 are restricted to retinal rod and cone cells.

REFERENCES

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2. Janson, I.M., et al. 1997. Phosphorylation of CaBP1 and CaBP2 by protein kinase CK2. *J. Biochem.* 121: 112-117.
3. Haeseleer, F., et al. 2000. Five members of a novel Ca²⁺-binding protein (CaBP) subfamily with similarity to calmodulin. *J. Biol. Chem.* 275: 1247-1260.
4. Haeseleer, F., et al. 2004. Essential role of Ca²⁺-binding protein 4, a Cav1.4 channel regulator, in photoreceptor synaptic function. *Nat. Neurosci.* 7: 1079-1087.
5. Maeda, T., et al. 2005. A critical role of CaBP4 in the cone synapse. *Invest. Ophthalmol. Vis. Sci.* 46: 4320-4327.
6. Zeitz, C., et al. 2006. Mutations in CABP4, the gene encoding the Ca²⁺-binding protein 4, cause autosomal recessive night blindness. *Am. J. Hum. Genet.* 79: 657-667.
7. Lee, A., et al. 2007. Phosphorylation of the Ca²⁺-binding protein CaBP4 by protein kinase C ζ in photoreceptors. *J. Neurosci.* 27: 12743-12754.
8. Haeseleer, F. 2008. Interaction and colocalization of CaBP4 and Unc119 (MRG4) in photoreceptors. *Invest. Ophthalmol. Vis. Sci.* 9: 2366-2375.

CHROMOSOMAL LOCATION

Genetic locus: CABP4 (human) mapping to 11q13.2.

PRODUCT

CaBP4 siRNA (h) 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 CaBP4 shRNA Plasmid (h): sc-105173-SH and CaBP4 shRNA (h) Lentiviral Particles: sc-105173-V as alternate gene silencing products.

For independent verification of CaBP4 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-105173A and sc-105173B.

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

CaBP4 siRNA (h) is recommended for the inhibition of CaBP4 expression in human 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

CaBP4 (D-6): sc-271885 is recommended as a control antibody for monitoring of CaBP4 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 CaBP4 gene expression knockdown using RT-PCR Primer: CaBP4 (h)-PR: sc-105173-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.