

# CASK siRNA (h): sc-29920

## BACKGROUND

The MAGUK (membrane-associated guanylate kinase homologs) family of proteins contain multiple protein-binding domains and are involved in cell junction organization, tumor suppression and signaling. CASK (also designated LIN-2) belongs to a MAGUK subfamily which is characterized by a novel domain structure that consists of a calcium/calmodulin-dependent protein kinase domain followed by PDZ, SH3 and guanylate kinase-like (GUK) domains. CASK is expressed in rat brain where it binds to cell-surface proteins, such as neurexin and syndecan, and is thought to be involved in signaling at neuronal synapses. CASK translocates to the nucleus and interacts with Tbr-1 to form a complex, which binds to a specific DNA sequence (the T-element), and induces the expression of specific genes, including Reelin. CASK displays a transcription regulation function, which appears crucial for cerebrocortical development.

## REFERENCES

1. Hata, Y., et al. 1996. CASK: a novel dlg/PSD95 homolog with an N-terminal calmodulin-dependent protein kinase domain identified by interaction with neuexins. *J. Neurosci.* 16: 2488-2494.
2. Dimitratos, S.D., et al. 1997. Camguk, LIN-2, and CASK: novel membrane-associated guanylate kinase homologs that also contain CaM kinase domains. *Mech. Dev.* 63: 127-130.
3. Cohen, A.R., et al. 1998. Human CASK/LIN-2 binds syndecan-2 and protein 4.1 and localizes to the basolateral membrane of epithelial cells. *J. Cell Biol.* 142: 129-138.
4. Hsueh, Y.P., et al. 1998. Direct interaction of CASK/LIN-2 and syndecan heparan sulfate proteoglycan and their overlapping distribution in neuronal synapses. *J. Cell Biol.* 142: 139-151.
5. Hsueh, Y.P., et al. 1999. Regulated expression and subcellular localization of syndecan heparan sulfate proteoglycans and the syndecan-binding protein CASK/LIN-2 during rat brain development. *J. Neurosci.* 19: 7415-7425.
6. Hsueh, Y.P., et al. 2000. Nuclear translocation and transcription regulation by the membrane-associated guanylate kinase CASK/LIN-2. *Nature* 404: 298-302.
7. Bredt, D.S. 2000. Reeling CASK into the nucleus. *Nature* 404: 241-242.

## CHROMOSOMAL LOCATION

Genetic locus: CASK (human) mapping to Xp11.4.

## PRODUCT

CASK siRNA (h) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CASK shRNA Plasmid (h): sc-29920-SH and CASK shRNA (h) Lentiviral Particles: sc-29920-V as alternate gene silencing products.

For independent verification of CASK (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-29920A, sc-29920B and sc-29920C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

CASK siRNA (h) is recommended for the inhibition of CASK 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  $\mu$ M in 66  $\mu$ 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

CASK (C-6): sc-13158 is recommended as a control antibody for monitoring of CASK 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>TM</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CASK gene expression knockdown using RT-PCR Primer: CASK (h)-PR: sc-29920-PR (20  $\mu$ l, 552 bp). 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](http://www.scbt.com) for detailed protocols and support products.