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# CASPR2 siRNA (m): sc-41918

## BACKGROUND

CASPR (for contactin-associated protein, also designated Paranodin) is a transmembrane glycoprotein of the neurexin superfamily that is highly enriched in regions of myelinated axons. The axons of myelinated nerves in the adult nervous system possess specialized subcellular structures essential for efficient and rapid action potential propagation. CASPR and the closely related molecule CASPR2, a mammalian homolog of *Drosophila* Neurexin IV (Nrx-IV), demarcate distinct subdomains in myelinated axons. While CASPR is present at the paranodal junctions, CASPR2 is precisely colocalized with Shaker-like K<sup>+</sup> channels in the juxtaparanodal region. CASPR2 specifically associates with Kv1.1, Kv1.2, and their Kvβ2 subunit. CASPR family members may play a role in the local differentiation of the axon into distinct functional subdomains.

## REFERENCES

1. Waxman, S.G. 1997. Axon-glia interactions: building a smart nerve fiber. *Curr. Biol.* 7: R406-R410.
2. Poliak, S., et al. 1997. Caspr2, a new member of the neurexin superfamily, is localized at the juxtaparanodes of myelinated axons and associates with K<sup>+</sup> channels. *Neuron* 24: 1037-1104.
3. Einheber, S., et al. 1997. The axonal membrane protein Caspr, a homologue of neurexin IV, is a component of the septate-like paranodal junctions that assemble during myelination. *J. Cell Biol.* 139: 1495-1506.
4. Bellen, H.J., et al. 1998. Neurexin IV, caspr and paranodin—novel members of the neurexin family: encounters of axons and glia. *Trends Neurosci.* 21: 444-449.
5. Missler, M., et al. 1998. Neurexins: three genes and 1001 products. *Trends Genet.* 14: 20-26.

## CHROMOSOMAL LOCATION

Genetic locus: Cntnap2 (mouse) mapping to 6 B2.2.

## PRODUCT

CASPR2 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 CASPR2 shRNA Plasmid (m): sc-41918-SH and CASPR2 shRNA (m) Lentiviral Particles: sc-41918-V as alternate gene silencing products.

For independent verification of CASPR2 (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-41918A, sc-41918B and sc-41918C.

## 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.

## 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

CASPR2 siRNA (m) is recommended for the inhibition of CASPR2 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

CASPR2 (H-10): sc-398454 is recommended as a control antibody for monitoring of CASPR2 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 CASPR2 gene expression knockdown using RT-PCR Primer: CASPR2 (m)-PR: sc-41918-PR (20 μl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.