



# Opalin siRNA (h): sc-90734

## BACKGROUND

Opalin, also known as HTMP10, oligodendrocytic myelin paranodal and inner loop protein or TMEM10 (transmembrane protein 10), is a 141 amino acid single-pass type I membrane protein that is expressed specifically in oligodendrocytes of brain. The gene encoding Opalin maps to human chromosome 10q24.1. Spanning nearly 135 million base pairs, chromosome 10 makes up approximately 4.5% of total DNA in cells and encodes nearly 1,200 genes. Several protein-coding genes, including those that encode for chemokines, cadherins, excision repair proteins, early growth response factors (Egrs) and fibroblast growth receptors (FGFRs), are located on chromosome 10. Defects in some of the genes that map to chromosome 10 are associated with Charcot-Marie-Tooth disease, Jackson-Weiss syndrome, Usher syndrome, nonsyndromic deafness, Wolman's syndrome, Cowden syndrome, multiple endocrine neoplasia type 2 and porphyria.

## REFERENCES

1. Jabs, E.W., et al. 1994. Jackson-Weiss and Crozon syndromes are allelic with mutations in fibroblast growth factor receptor 2. *Nat. Genet.* 8: 275-279.
2. Nobile, C., et al. 2002. Identification and characterization of a novel human brain-specific gene, homologous to *S. scrofa* tmp83.5, in the chromosome 10q24 critical region for temporal lobe epilepsy and spastic paraplegia. *Gene* 282: 87-94.
3. Berger, P., et al. 2002. Molecular cell biology of Charcot-Marie-Tooth disease. *Neurogenetics* 4: 1-15.
4. Teresi, R.E., et al. 2007. Cowden syndrome-affected patients with PTEN promoter mutations demonstrate abnormal protein translation. *Am. J. Hum. Genet.* 81: 756-767.
5. Aruga, J., et al. 2007. An oligodendrocyte enhancer in a phylogenetically conserved intron region of the mammalian myelin gene Opalin. *J. Neurochem.* 102: 1533-1547.
6. Yoshikawa, F., et al. 2008. Opalin, a transmembrane sialoglycoprotein located in the central nervous system myelin paranodal loop membrane. *J. Biol. Chem.* 283: 20830-20840.

## CHROMOSOMAL LOCATION

Genetic locus: OPALIN (human) mapping to 10q24.1.

## PRODUCT

Opalin 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 Opalin shRNA Plasmid (h): sc-90734-SH and Opalin shRNA (h) Lentiviral Particles: sc-90734-V as alternate gene silencing products.

For independent verification of Opalin (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-90734A, sc-90734B and sc-90734C.

## 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

Opalin siRNA (h) is recommended for the inhibition of Opalin 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

Opalin (H-12): sc-374490 is recommended as a control antibody for monitoring of Opalin 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™ Molecular Weight Standards: sc-2035, UltraCruz® 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® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Opalin gene expression knockdown using RT-PCR Primer: Opalin (h)-PR: sc-90734-PR (20  $\mu$ 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.