



## RP1L1 siRNA (h): sc-77517

### BACKGROUND

RP1L1 (retinitis pigmentosa 1-like 1), also known as DCDC4B, is a 2,480 amino acid retinal-specific protein that contains two doublecortin domains and a large repetitive C-terminal domain. Existing as multiple alternatively spliced isoforms, RP1L1 may play a role in the pathogenesis of retinitis pigmentosa, a group of genetic eye conditions that generally lead to night blindness and tunnel vision. The gene encoding RP1L1 maps to human chromosome 8, which consists of nearly 146 million base pairs, houses more than 800 genes and is associated with a variety of diseases and malignancies. Schizophrenia, bipolar disorder, Trisomy 8, Pfeiffer syndrome, congenital hypothyroidism, Waardenburg syndrome and some leukemias and lymphomas are thought to occur as a result of defects in specific genes that map to chromosome 8.

### REFERENCES

1. Sullivan, L.S., Heckenlively, J.R., Bowne, S.J., Zuo, J., Hide, W.A., Gal, A., Denton, M., Inglehearn, C.F., Blanton, S.H. and Daiger, S.P. 1999. Mutations in a novel retina-specific gene cause autosomal dominant retinitis pigmentosa. *Nat. Genet.* 22: 255-259.
2. Conte, I., Lestingi, M., den Hollander, A., Alfano, G., Ziviello, C., Pugliese, M., Circolo, D., Caccioppoli, C., Ciccodicola, A. and Banfi, S. 2003. Identification and characterisation of the retinitis pigmentosa 1-like1 gene (RP1L1): a novel candidate for retinal degenerations. *Eur. J. Hum. Genet.* 11: 155-162.
3. Bowne, S.J., Daiger, S.P., Malone, K.A., Heckenlively, J.R., Kennan, A., Humphries, P., Hughbanks-Wheaton, D., Birch, D.G., Liu, Q., Pierce, E.A., Zuo, J., Huang, Q., Donovan, D.D. and Sullivan, L.S. 2003. Characterization of RP1L1, a highly polymorphic paralog of the retinitis pigmentosa 1 (RP1) gene. *Mol. Vis.* 9: 129-137.
4. Wang, D.Y., Chan, W.M., Tam, P.O., Baum, L., Lam, D.S., Chong, K.K., Fan, B.J. and Pang, C.P. 2005. Gene mutations in retinitis pigmentosa and their clinical implications. *Clin. Chim. Acta* 351: 5-16.
5. Chiang, S.W., Wang, D.Y., Chan, W.M., Tam, P.O., Chong, K.K., Lam, D.S. and Pang, C.P. 2006. A novel missense RP1 mutation in retinitis pigmentosa. *Eye* 20: 602-605.

### CHROMOSOMAL LOCATION

Genetic locus: RP1L1 (human) mapping to 8p23.1.

### PRODUCT

RP1L1 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 RP1L1 shRNA Plasmid (h): sc-77517-SH and RP1L1 shRNA (h) Lentiviral Particles: sc-77517-V as alternate gene silencing products.

For independent verification of RP1L1 (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-77517A, sc-77517B and sc-77517C.

### 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

RP1L1 siRNA (h) is recommended for the inhibition of RP1L1 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.

### RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RP1L1 gene expression knockdown using RT-PCR Primer: RP1L1 (h)-PR: sc-77517-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.