

UBQLNL siRNA (h): sc-96773

BACKGROUND

Ubiquitin is a 77 amino acid protein that targets proteins for degradation by the 26S proteasome. Ubiquitin-like (UBL) proteins are not directly involved in protein degradation, but appear to have many mechanistic similarities with the ubiquitin pathway. UBQLNL (ubiquilin-like protein) is a 475 amino acid protein that contains a ubiquitin-like domain. There are two different isoforms of UBQLNL that are produced as a result of alternative splicing events. UBQLNL shares significant sequence similarity with PLIC-1, also known as Ubiquilin-1, a protein that associates with proteasomes and two different E3 ubiquitin ligase enzymes. These associations suggest that PLIC-1 may link ubiquitination machinery and proteasomes for *in vivo* protein degradation. PLIC-1 is a cytoplasmic protein that associates with the DAN gene product and may play a critical role in cell cycle regulation. It also interacts with two proteins linked to early-onset Alzheimer's disease, presenilin-1 and presenilin-2, and promotes accumulation of the presenilin proteins. PLIC-1 is abundant in neurons of healthy brain, neurofibrillary tangles in Alzheimer's-diseased brain and Lewy bodies of Parkinson-diseased brain.

REFERENCES

1. Ozaki, T., Hishiki, T., Toyama, Y., Yuasa, S., Nakagawara, A. and Sakiyama, S. 1997. Identification of a new cellular protein that can interact specifically with DAN. *DNA Cell Biol.* 16: 985-991.
2. Wu, A.L., Wang, J., Zheleznyak, A. and Brown, E.J. 1999. Ubiquitin-related proteins regulate interaction of vimentin intermediate filaments with the plasma membrane. *Mol. Cell* 4: 619-625.
3. Kaye, F.J., Modi, S., Ivanovska, I., Koonin, E.V., Thress, K., Kubo, A., Kornbluth, S. and Rose, M.D. 2000. A family of ubiquitin-like proteins binds the ATPase domain of Hsp70-like Stch. *FEBS Lett.* 467: 348-355.
4. Mah, A.L., Perry, G., Smith, M.A. and Monteiro, M.J. 2000. Identification of ubiquilin, a novel presenilin interactor that increases presenilin protein accumulation. *J. Cell Biol.* 151: 847-862.
5. Hanaoka, E., Ozaki, T., Ohira, M., Nakamura, Y., Suzuki, M., Takahashi, E., Moriya, H., Nakagawara, A. and Sakiyama, S. 2000. Molecular cloning and expression analysis of the human DA41 gene and its mapping to chromosome 9q21.2-q21.3. *J. Hum. Genet.* 45: 188-191.
6. Kleijnen, M.F., Shih, A.H., Zhou, P., Kumar, S., Soccio, R.E., Kedersha, N.L., Gill, G. and Howley, P.M. 2000. The hPLIC proteins may provide a link between the ubiquitination machinery and the proteasome. *Mol. Cell* 6: 409-419.
7. Hayes, M.G., Pluzhnikov, A., Miyake, K., Sun, Y., Ng, M.C., Roe, C.A., Below, J.E., Nicolae, R.I., Konkashbaev, A., Bell, G.I., Cox, N.J. and Hanis, C.L. 2007. Identification of type 2 diabetes genes in Mexican Americans through genome-wide association studies. *Diabetes* 56: 3033-3044.

CHROMOSOMAL LOCATION

Genetic locus: UBQLNL (human) mapping to 11p15.4.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

UBQLNL 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see UBQLNL shRNA Plasmid (h): sc-96773-SH and UBQLNL shRNA (h) Lentiviral Particles: sc-96773-V as alternate gene silencing products.

For independent verification of UBQLNL (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-96773A, sc-96773B and sc-96773C.

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

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

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor UBQLNL gene expression knockdown using RT-PCR Primer: UBQLNL (h)-PR: sc-96773-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.