

# UBQLN3 siRNA (h): sc-96317

## BACKGROUND

Ubiquitin (Ub) is among the most phylogenetically conserved proteins known. The primary function of this small, 76 amino acid protein is to clear abnormal, foreign and improperly folded proteins by targeting them for degradation by the 26S proteasome. Many ubiquitin-like proteins function as post-translational protein modifiers, such as members of the SUMO protein family, however some ubiquitin-like proteins regulate protein-protein interactions and cell cycle events, thereby functioning outside of the traditional ubiquitination pathway. UBQLN3 (Ubiquilin-3) is a 654 amino acid protein containing one N-terminal ubiquitin-like (UBQ) domain and one C-terminal UBA domain. With expression limited to testis, it has been suggested that UBQLN3 may associate with testis-specific cyclin A1 and/or cyclin A to regulate the cell cycle during spermatogenesis. Similarly, a family member related to UBQLN3, namely PLIC-1, also known as Ubiquilin-1, may also play a critical role in cell cycle regulation.

## REFERENCES

1. Conklin, D., et al. 2000. Molecular cloning, chromosome mapping and characterization of UBQLN3 a testis-specific gene that contains an ubiquitin-like domain. *Gene* 249: 91-98.
2. Bulger, M., et al. 2000. Comparative structural and functional analysis of the olfactory receptor genes flanking the human and mouse  $\beta$ -globin gene clusters. *Proc. Natl. Acad. Sci. USA* 97: 14560-14565.
3. Su, H.L. and Li, S.S. 2002. Molecular features of human ubiquitin-like SUMO genes and their encoded proteins. *Gene* 296: 65-73.
4. Glickman, M.H. and Ciechanover, A. 2002. The ubiquitin-proteasome proteolytic pathway: destruction for the sake of construction. *Physiol. Rev.* 82: 373-428.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605473. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Bensemain, F., et al. 2006. Association study of the Ubiquilin gene with Alzheimer's disease. *Neurobiol. Dis.* 22: 691-693.

## CHROMOSOMAL LOCATION

Genetic locus: UBQLN3 (human) mapping to 11p15.4.

## PRODUCT

UBQLN3 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 UBQLN3 shRNA Plasmid (h): sc-96317-SH and UBQLN3 shRNA (h) Lentiviral Particles: sc-96317-V as alternate gene silencing products.

For independent verification of UBQLN3 (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-96317A, sc-96317B and sc-96317C.

## 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

UBQLN3 siRNA (h) is recommended for the inhibition of UBQLN3 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

UBQLN3 (B-4): sc-393634 is recommended as a control antibody for monitoring of UBQLN3 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 UBQLN3 gene expression knockdown using RT-PCR Primer: UBQLN3 (h)-PR: sc-96317-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.