SANTA CRUZ BIOTECHNOLOGY, INC.

PLIC-1 siRNA (m): sc-41670

BACKGROUND

Proteins linking integrin-assocated protein with cytoskeleton (PLICs) provide a signaling connection between the membrane receptors for thrombospondin and the cytoskeleton. The PLIC proteins are part of ubiquitin-like proteins, all of which contain an ubiquitin-like domain. Both PLIC-1 and PLIC-2, known also as ubiquilin 1 and ubiquilin 2, associate with proteasomes and two different E3 ubiquitin ligase enzymes. These associations suggest that PLIC-1 and PLIC-2 may link ubiquitination machinery and proteasomes for *in vivo* protein degradation. PLIC-1 and PLIC-2 both bind to a short peptide within the ATPase domain of the HSP 70-like STCH protein. 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, neuro-fibrillary tangles in Alzheimer's-diseased brain and Lewy bodies of Parkinson-diseased brain.

REFERENCES

1. Ozaki, T., et al. 1997. Identification of a new cellular protein that can interact specifically with DAN. DNA Cell Biol. 16: 985-991.
2. Wu, A.L., et al. 1999. Ubiquitin-related proteins regulate interaction of Vimentin intermediate filaments with the plasma membrane. Mol. Cell 4: 619-625.
3. Kleijnen, M.F., et al. 2000. The hPLIC proteins may provide a link between the ubiquitination machinery and the proteasome. Mol. Cell 6: 409-419.
4. Mah, A.L., et al. 2000. Identification of ubiquilin, a novel presenilin interactor that increases presenilin protein accumulation. J. Cell Biol. 151: 847-862.
5. Hanaoka, E., et al. 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. Kaye, F.J. and Shows, T.B. 2000. Assignment of ubiquilin 2 (UBQLN2) to human chromosome Xp11.23-p11.1 by gene bridge radiation hybrids. Cytogenet. Cell Genet. 89: 116-117.

CHROMOSOMAL LOCATION

Genetic locus: Ubqln1 (mouse) mapping to 13 B1.

PRODUCT

PLIC-1 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 PLIC-1 shRNA Plasmid (m): sc-41670-SH and PLIC-1 shRNA (m) Lentiviral Particles: sc-41670-V as alternate gene silencing products.

For independent verification of PLIC-1 (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-41670A, sc-41670B and sc-41670C.

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

PLIC-1 siRNA (m) is recommended for the inhibition of PLIC-1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PLIC-1 gene expression knockdown using RT-PCR Primer: PLIC-1 (m)-PR: sc-41670-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Yin, P., et al. 2023. HACE1 expression in heart failure patients might promote mitochondrial oxidative stress and ferroptosis by targeting NRF2. Aging 15: 13888-13900.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

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