SANTA CRUZ BIOTECHNOLOGY, INC.

ERp29 siRNA (h): sc-60599

BACKGROUND

Endoplasmic reticulum proteins (ERps) are widely expressed proteins that localize to the ER. ERp19, ERp29, ERp46, ERp57 and ERp72 may act as proteases, protein disulfide isomerases, thiol-disulfide oxidases, phospholipases or a combination of these. ERp29, also designated chromosome 12 open reading frame 8 (C12ORF8), is a reticuloplasmin that dimerizes and may function in secretory protein processing within the ER. ERp29 also plays a possible role in the folding of proteins in the ER. Though this protein shows sequence similarity to the protein disulfide isomerase family, it does not function as a disulfide isomerase, as it lacks the thioredoxin motif characteristic of this family. Like other reticuloplasmins, ERp29 contains an N-terminal hydrophobic signal sequence and a C-terminal endoplasmic reticulum retention motif (KEEL).

REFERENCES

1. Bo, Z., et al. 2005. Identification of differentially expressed proteins of gamma-ray irradiated rat intestinal epithelial IEC-6 cells by two-dimensional gel electrophoresis and matrix-assisted laser desorption/ionisation-time of flight mass spectrometry. Proteomics 5: 426-432.
2. Chandra, H., et al. 2005. Proteome analysis of mouse macrophages treated with anthrax lethal toxin. Biochim. Biophys. Acta 1747: 151-159.
3. Morand, J.P., et al. 2005. Proteomic profiling of hepatic endoplasmic reticulum-associated proteins in an animal model of Insulin resistance and metabolic dyslipidemia. J. Biol. Chem. 280: 17626-17633.
4. Willis, D., et al. 2005. Differential transport and local translation of cytoskeletal, injury-response, and neurodegeneration protein mRNAs in axons. J. Neurosci. 25: 778-791.

CHROMOSOMAL LOCATION

Genetic locus: ERP29 (human) mapping to 12q24.13.

PRODUCT

ERp29 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ERp29 shRNA Plasmid (h): sc-60599-SH and ERp29 shRNA (h) Lentiviral Particles: sc-60599-V as alternate gene silencing products.

For independent verification of ERp29 (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-60599A, sc-60599B and sc-60599C.

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

ERp29 siRNA (h) is recommended for the inhibition of ERp29 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 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 ERp29 gene expression knockdown using RT-PCR Primer: ERp29 (h)-PR: sc-60599-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. Farmaki, E., et al. 2011. ERp29 regulates response to doxorubicin by a PERK-mediated mechanism. Biochim. Biophys. Acta 1813: 1165-1171.
2. Huang, C., et al. 2015. Erp29 attenuates cigarette smoke extract-induced endoplasmic reticulum stress and mitigates tight junction damage in retinal pigment epithelial cells. Invest. Ophthalmol. Vis. Sci. 56: 6196-6207.
3. Hui, Y., et al. 2022. Nonenzymatic function of DPP4 promotes diabetes-associated cognitive dysfunction through IGF-2R/PKA/SP1/ERp29/IP3R2 pathway-mediated impairment of Treg function and M1 microglia polarization. Metabolism. E-published.

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.