SANTA CRUZ BIOTECHNOLOGY, INC.

Ero1-Lα siRNA (h): sc-77284

BACKGROUND

Ero1-Lα (endoplasmic oxidoreductin-1-like), also known as Ero1α or oxidoreductin-1-Lα, is an essential oxidoreductase that oxidizes proteins and is required for the folding of immunoglobulins. Ero-1Lα covalently binds with PDI (protein disulfide-isomerase) and together they produce disulfide bonds between proteins in the endoplasmic reticulum. Ero1-Lα and SIRT1 regulate adiponectin secretion from adipose tissue. Ero1-Lα and associated proteins also modulate PPARγ (peroxisome proliferator-activated receptor γ) and SIRT1 activities. Ero1-Lα is stimulated by hypoxia, suggesting that it is regulated through the HIF (hypoxia inducible transcrip-tion factor) pathway. Ero1-Lα is ubiquitously expressed at low levels but expressed at high levels in upper digestive tract and esophagus. Ero1-Lα may function both as a monomer and a homodimer.

REFERENCES

1. Benham, A.M., et al. 2000. The CXXCXXC motif determines the folding, structure and stability of human Ero1-Lα. EMBO J. 19: 4493-4502.
2. Frand, A.R., et al. 2000. Pathways for protein disulphide bond formation. Trends Cell Biol. 10: 203-210.
3. Cabibbo, A., et al. 2000. Ero1-L, a human protein that favors disulfide bond formation in the endoplasmic reticulum. J. Biol. Chem. 275: 4827-4833.
4. Gess, B., et al. 2003. The cellular oxygen tension regulates expression of the endoplasmic oxidoreductase Ero1-Lα. Eur. J. Biochem. 270: 2228-2235.
5. Bertoli, G., et al. 2004. Two conserved cysteine triads in human Ero1α cooperate for efficient disulfide bond formation in the endoplasmic reticulum. J. Biol. Chem. 279: 30047-30052.
6. Otsu, M., et al. 2006. Dynamic retention of Ero1α and Ero1β in the endoplasmic reticulum by interactions with PDI and ERp44. Antioxid. Redox Signal. 8: 274-282.
7. Wang, Z.V., et al. 2007. Secretion of the adipocyte-specific secretory protein adiponectin critically depends on thiol-mediated protein retention. Mol. Cell. Biol. 27: 3716-3731.
8. Qiang, L., et al. 2007. Adiponectin secretion is regulated by SIRT1 and the endoplasmic reticulum oxidoreductase Ero1-Lα. Mol. Cell. Biol. 27: 4698-4707.

CHROMOSOMAL LOCATION

Genetic locus: ERO1L (human) mapping to 14q22.1.

PRODUCT

Ero1-Lα 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 Ero1-Lα shRNA Plasmid (h): sc-77284-SH and Ero1-Lα shRNA (h) Lentiviral Particles: sc-77284-V as alternate gene silencing products.

For independent verification of Ero1-Lα (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-77284A, sc-77284B and sc-77284C.

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

Ero1-Lα siRNA (h) is recommended for the inhibition of Ero1-Lα 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.

GENE EXPRESSION MONITORING

Ero1-Lα (D-7): sc-365526 is recommended as a control antibody for monitoring of Ero1-Lα 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 Ero1-Lα gene expression knockdown using RT-PCR Primer: Ero1-Lα (h)-PR: sc-77284-PR (20 µl). 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 for detailed protocols and support products.