SANTA CRUZ BIOTECHNOLOGY, INC.

SEP15 siRNA (h): sc-88552

BACKGROUND

Selenium is an essential trace element that is incorporated as selenocysteine into the primary structure of selenoproteins. Nutritional deficiency of selenium decreases selenoprotein concentrations and leads to pathologic conditions. Most of the known selenoproteins are members of the glutathione peroxidase or iodothyronine deiodinase families. SEP15 (15 KDa selenoprotein) is a 162 amino acid protein that assists in redox reactions involving disulfide bond formation and protein folding in the endoplasmic reticulum. Localizing to the lumen of the endoplasmic reticulum, SEP15 is expressed in testis, brain, kidney, liver and prostate, with low levels of expression found in trachea, skeletal muscle and mammary gland. SEP15 is a member of the selenoprotein M/SEP15 family and exists as two alternatively spliced isoforms which are encoded by a gene located on human chromosome 1.

REFERENCES

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2. Kumaraswamy, E., et al. 2000. Structure-expression relationships of the 15-kDa selenoprotein gene. Possible role of the protein in cancer etiology. J. Biol. Chem. 275: 35540-35547.
3. Korotkov, K.V., et al. 2001. Association between the 15-kDa selenoprotein and UDP-glucose:glycoprotein glucosyltransferase in the endoplasmic reticulum of mammalian cells. J. Biol. Chem. 276: 15330-15336.
4. Kumaraswamy, E., et al. 2002. Genetic and functional analysis of mammalian Sep15 selenoprotein. Meth. Enzymol. 347: 187-197.
5. Wu, H.J., et al. 2003. Redox reactions of Sep15 and its relationship with tumor development. Ai Zheng 22: 119-122.
6. Apostolou, S., et al. 2004. Growth inhibition and induction of apoptosis in mesothelioma cells by selenium and dependence on selenoprotein SEP15 genotype. Oncogene 23: 5032-5040.
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CHROMOSOMAL LOCATION

Genetic locus: SEP15 (human) mapping to 1p22.3.

PRODUCT

SEP15 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 SEP15 shRNA Plasmid (h): sc-88552-SH and SEP15 shRNA (h) Lentiviral Particles: sc-88552-V as alternate gene silencing products.

For independent verification of SEP15 (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-88552A, sc-88552B and sc-88552C.

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

SEP15 siRNA (h) is recommended for the inhibition of SEP15 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 SEP15 gene expression knockdown using RT-PCR Primer: SEP15 (h)-PR: sc-88552-PR (20 µl, 570 bp). 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.