SANTA CRUZ BIOTECHNOLOGY, INC.

Oxr1 siRNA (h): sc-77524

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Reactive oxygen species (ROS) are highly reactive molecules that are a normal consequence of aerobic metabolism. Cellular ROS damage can induce apoptosis and spontaneous mutagenesis. Oxr1 (oxidation resistance protein 1) is a 758 amino acid mitochondrial protein that is most likely involved in protection from oxidative damage. Oxr1 is highly conserved from yeast to humans and is specific to eukaryotes. Induced by heat and oxidative stress, the carboxyl-terminal half of Oxr1 is required for its function. Upregulation of superoxide dismutase and catalase was observed in developing *Drosophila* mutants that lacked the gene encoding Oxr1, suggesting that oxidative stress may trigger compensatory protein expression. There are four isoforms of Oxr1 that are produced as a result of alternative splicing events.

REFERENCES

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3. Bohr, V.A. 2002. Repair of oxidative DNA damage in nuclear and mitochondrial DNA, and some changes with aging in mammalian cells. Free Radic. Biol. Med. 32: 804-812.
4. Elliott, N.A. and Volkert, M.R. 2004. Stress induction and mitochondrial localization of Oxr1 proteins in yeast and humans. Mol. Cell. Biol. 24: 3180-3187.
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6. Durand, M., Kolpak, A., Farrell, T., Elliott, N.A., Shao, W., Brown, M. and Volkert, M.R. 2007. The Oxr domain defines a conserved family of eukaryotic oxidation resistance proteins. BMC Cell Biol. 8: 13.

CHROMOSOMAL LOCATION

Genetic locus: OXR1 (human) mapping to 8q23.1.

PRODUCT

Oxr1 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 Oxr1 shRNA Plasmid (h): sc-77524-SH and Oxr1 shRNA (h) Lentiviral Particles: sc-77524-V as alternate gene silencing products.

For independent verification of Oxr1 (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-77524A, sc-77524B and sc-77524C.

RESEARCH USE

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

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

Oxr1 siRNA (h) is recommended for the inhibition of Oxr1 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 Oxr1 gene expression knockdown using RT-PCR Primer: Oxr1 (h)-PR: sc-77524-PR (20 µl, 554 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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