



quiescin Q6 siRNA (h): sc-78632

BACKGROUND

Quiescin Q6 (quiescin Q6 sulfhydryl oxidase 1), also known as Q6, QSCN6 or QSOX1, is a 747 amino acid protein that oxidizes sulfhydryl groups of protein/peptide thiols to disulfides while reducing oxygen to hydrogen peroxide. Quiescin Q6 is implicated in growth regulation as its expression is induced in fibroblasts as they exit the proliferative cycle and begin quiescence. A member of the quiescin-sulfhydryl oxidase (QSOX) family, quiescin Q6 is involved in disulfide bond formation and may possess tumor-suppressing capabilities. Expressed in skeletal muscle, heart, lung, placenta, liver and pancreas, quiescin Q6 exists as two isoforms which are formed by alternative splicing; quiescin Q6 isoform 1 is a single-pass membrane protein of the golgi apparatus, whereas quiescin Q6 isoform 2 is a secreted protein found in the extracellular medium of quiescent cells. Quiescin Q6 contains one thioredoxin domain and an ERV/ALR sulfhydryl oxidase domain.

REFERENCES

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2. Coppock, D.L., et al. 1998. The quiescin Q6 gene (QSCN6) is a fusion of two ancient gene families: thioredoxin and ERV1. *Genomics* 54: 460-468.
3. Coppock, D., et al. 2000. Regulation of the quiescence-induced genes: quiescin Q6, decorin, and ribosomal protein S29. *Biochem. Biophys. Res. Commun.* 269: 604-610.
4. Wittke, I., et al. 2003. Neuroblastoma-derived sulfhydryl oxidase, a new member of the sulfhydryl oxidase/Quiescin6 family, regulates sensitization to interferon γ -induced cell death in human neuroblastoma cells. *Cancer Res.* 63: 7742-7752.
5. Radom, J., et al. 2006. Identification and expression of a new splicing variant of FAD-sulfhydryl oxidase in adult rat brain. *Biochim. Biophys. Acta* 1759: 225-233.
6. Chakravarthi, S., et al. 2007. Intracellular catalysis of disulfide bond formation by the human sulfhydryl oxidase, QSOX1. *Biochem. J.* 404: 403-411.
7. Heckler, E.J., et al. 2008. Human quiescin-sulfhydryl oxidase, QSOX1: probing internal redox steps by mutagenesis. *Biochemistry* 47: 4955-4963.

CHROMOSOMAL LOCATION

Genetic locus: QSOX1 (human) mapping to 1q25.2.

PRODUCT

quiescin Q6 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see quiescin Q6 shRNA Plasmid (h): sc-78632-SH and quiescin Q6 shRNA (h) Lentiviral Particles: sc-78632-V as alternate gene silencing products.

For independent verification of quiescin Q6 (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-78632A, sc-78632B and sc-78632C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

quiescin Q6 siRNA (h) is recommended for the inhibition of quiescin Q6 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 μ M in 66 μ l. 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 quiescin Q6 gene expression knockdown using RT-PCR Primer: quiescin Q6 (h)-PR: sc-78632-PR (20 μ l). 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.