

REDD-2 siRNA (h): sc-88956

BACKGROUND

REDD-2 (regulated in development and DNA damage response 2), also designated Rtp801L or DDIT4L (DNA-damage-inducible transcript 4-like), is a 193 amino acid cytoplasmic protein belonging to the DDIT4 family and is predominantly expressed in skeletal muscle. Considered a stress-induced protein, REDD-2 is a negative regulator of the mTOR (mammalian target of rapamycin) pathway. mTOR is a serine/threonine kinase that plays an essential role in cell growth control and is an important regulator of skeletal muscle size. Highly expressed in human atherosclerotic lesions and macrophages, REDD-2 mediates monocyte cell death through reduction of Trx (thioredoxin-1) expression. REDD2 expression in macrophages increases oxidized LDL (oxLDL)-induced cell death, suggesting that REDD2 may play a critical role in arterial pathology.

REFERENCES

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4. Furuta, J., et al. 2006. Silencing of Peroxiredoxin 2 and aberrant methylation of 33 CpG islands in putative promoter regions in human malignant melanomas. *Cancer Res.* 66: 6080-6086.
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6. Abe, M., et al. 2008. Identification of genes targeted by CpG island methylator phenotype in neuroblastomas, and their possible integrative involvement in poor prognosis. *Oncology* 74: 50-60.
7. Miyazaki, M. and Esser, K.A. 2009. REDD2 is enriched in skeletal muscle and inhibits mTOR signaling in response to leucine and stretch. *Am. J. Physiol., Cell Physiol.* 296: C583-C592.
8. Imen, J.S., et al. 2009. The regulated in development and DNA damage response 2 (REDD2) gene mediates human monocyte cell death through a reduction in thioredoxin-1 expression. *Free Radic. Biol. Med.* 46: 1404-1410.
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CHROMOSOMAL LOCATION

Genetic locus: DDIT4L (human) mapping to 4q24.

PROTOCOLS

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

PRODUCT

REDD-2 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 REDD-2 shRNA Plasmid (h): sc-88956-SH and REDD-2 shRNA (h) Lentiviral Particles: sc-88956-V as alternate gene silencing products.

For independent verification of REDD-2 (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-88956A, sc-88956B and sc-88956C.

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

REDD-2 siRNA (h) is recommended for the inhibition of REDD-2 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 REDD-2 gene expression knockdown using RT-PCR Primer: REDD-2 (h)-PR: sc-88956-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.