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### Zuschläge

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- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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## TR $\alpha$ siRNA (m2): sc-156009

### BACKGROUND

Thyroid hormone nuclear receptors (TRs) are ligand-dependent transcription factors which regulate and control many metabolic and developmental processes. There are two genes encoding TRs identified to date, TR $\alpha$  and TR $\beta$ . TRs bind to thyroid hormone response elements (TREs) with half-site binding motifs in the orientation of palindromes, direct repeats or inverted palindromes. The affinities of binding are both variable and influenced differentially by 3,5,3'-triiodo-L-thyronine (T3). Transcriptional regulation by TRs is also modulated by heterodimerization with TR nuclear accessory proteins, the most extensively characterized of which are the retinoid X receptors (RXR $\alpha$ , RXR $\beta$  and RXR $\gamma$ ). The TR $\alpha$  isoform TR $\alpha$ 1 can display both a nuclear and undefined cytoplasmic location and is the only TR that is imported into the mitochondrial matrix. TR $\alpha$ 2 is a C-terminal variant of TR $\alpha$ 1 that does not bind thyroid hormones (THs) and weakly binds DNA. TR $\alpha$ 2 acts as a dominant negative antagonist of TH signalling.

### REFERENCES

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- Billon, N. et al. 2002. Normal timing of oligodendrocyte development depends on thyroid hormone receptor  $\alpha$ 1 (TR $\alpha$ 1). *EMBO J.* 21: 6452-6460.
- Mittag, J. et al. 2005. Athyroid Pax-8<sup>-/-</sup> mice cannot be rescued by the inactivation of TR $\alpha$ 1. *Endocrinology* 146: 3179-3184.

### CHROMOSOMAL LOCATION

Genetic locus: Thra (mouse) mapping to 11 D.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

### PRODUCT

TR $\alpha$  siRNA (m2) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TR $\alpha$  shRNA Plasmid (m2): sc-156009-SH and TR $\alpha$  shRNA (m2) Lentiviral Particles: sc-156009-V as alternate gene silencing products.

For independent verification of TR $\alpha$  (m2) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-156009A, sc-156009B and sc-156009C.

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

### APPLICATIONS

TR $\alpha$  siRNA (m2) is recommended for the inhibition of TR $\alpha$  expression in mouse 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  $\mu$ M in 66  $\mu$ 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.

### GENE EXPRESSION MONITORING

TR $\alpha$ 1/ $\alpha$ 2 (948C3a): sc-130021 is recommended as a control antibody for monitoring of TR $\alpha$  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).

### RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TR $\alpha$  gene expression knockdown using RT-PCR Primer: TR $\alpha$  (m2)-PR: sc-156009-PR (20  $\mu$ 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.