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- Trockeneiszuschlag
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- Expressversand

### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 



# TR $\beta$ 2 shRNA (m) Lentiviral Particles: sc-45906-V

## BACKGROUND

Thyroid hormone receptors (TRs) are ligand-dependent transcription factors that mediate the biological activities of thyroid hormone (T<sub>3</sub>). Thyroid hormone receptor  $\beta$ 2 (TR $\beta$ 2) is a high affinity receptor for triiodothyronine which belongs to the nuclear hormone receptor family and the NR1 subfamily. It is composed of three domains: a modulating N-terminal domain, a DNA-binding domain and a C-terminal steroid-binding domain. Defects in the receptor result in generalized thyroid hormone resistance (GTHR). GTHR is transmitted as an autosomal dominant trait, but an autosomal recessive form also exists. The disease is characterized by goiter, abnormal mental functions, increased susceptibility to infections, abnormal growth and bone maturation, tachycardia and deafness. GTHR patients also have high levels of circulating thyroid hormones (T<sub>3</sub>-T<sub>4</sub>), with normal or slightly elevated thyroid stimulating hormone.

## REFERENCES

- Pohlenz, J. 1999. Five new families with resistance to thyroid hormone not caused by mutations in the thyroid hormone receptor  $\beta$  gene. *J. Clin. Endocrinol. Metab.* 84: 3919-3928.
- Miller, L.D. 2004. Multi-tissue gene-expression analysis in a mouse model of thyroid hormone resistance. *Genome Biol.* 5:R31. Epub.
- Wu, S.Y. 2005. Tissue responses to thyroid hormone in a kindred with resistance to thyroid hormone harboring a commonly occurring mutation in the thyroid hormone receptor  $\beta$  gene (P453T). *J. Lab. Clin. Med.* 146: 85-94.
- Cheng, S.Y. 2005. Thyroid hormone receptor mutations and disease: beyond thyroid hormone resistance. *Trends Endocrinol. Metab.* 16: 176-82.
- Tian, H., et al. 2006. The N-terminal A/B domain of the thyroid hormone receptor- $\beta$ 2 isoform influences ligand-dependent recruitment of co-activators to the ligand binding domain. *Mol. Endocrinol.* 20: 2036-2051.

## CHROMOSOMAL LOCATION

Genetic locus: *Thrb* (mouse) mapping to 14 A2.

## PRODUCT

TR $\beta$ 2 shRNA (m) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200  $\mu$ l frozen stock containing  $1.0 \times 10^6$  infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see TR $\beta$ 2 siRNA (m): sc-45906 and TR $\beta$ 2 shRNA Plasmid (m): sc-45906-SH as alternate gene silencing products.

## STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

## PROTOCOLS

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

## APPLICATIONS

TR $\beta$ 2 shRNA (m) Lentiviral Particles is recommended for the inhibition of TR $\beta$ 2 expression in mouse cells.

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200  $\mu$ l frozen viral stock containing  $1.0 \times 10^6$  infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

## GENE EXPRESSION MONITORING

TR $\beta$ 2 (N-16): sc-10824 is recommended as a control antibody for monitoring of TR $\beta$ 2 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).

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TR $\beta$ 2 gene expression knockdown using RT-PCR Primer: TR $\beta$ 2 (m)-PR: sc-45906-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

## RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.