

# TR $\beta$ 2 (N-16): sc-10824

## 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

1. Pohlenz, J., et al. 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.
2. Miller, L.D., et al. 2004. Multi-tissue gene-expression analysis in a mouse model of thyroid hormone resistance. *Genome Biol.* 5: R31.
3. Cheng, S.Y., et al. 2005. Thyroid hormone receptor mutations and disease: beyond thyroid hormone resistance. *Trends Endocrinol. Metab.* 16: 176-182.
4. Ying, H., et al. 2005. Dual functions of the steroid hormone receptor co-activator 3 in modulating resistance to thyroid hormone. *Mol. Cell. Biol.* 25: 7687-7695.

## CHROMOSOMAL LOCATION

Genetic locus: THRB (human) mapping to 3p24.2; Thrb (mouse) mapping to 14 A2.

## SOURCE

TR $\beta$ 2 (N-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of TR $\beta$ 2 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-10824 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-10824 X, 200  $\mu$ g/0.1 ml.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

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

## APPLICATIONS

TR $\beta$ 2 (N-16) is recommended for detection of TR $\beta$ 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TR $\beta$ 2 (N-16) is also recommended for detection of TR $\beta$ 2 in additional species, including avian.

Suitable for use as control antibody for TR $\beta$ 2 siRNA (h): sc-45266, TR $\beta$ 2 siRNA (m): sc-45906, TR $\beta$ 2 shRNA Plasmid (h): sc-45266-SH, TR $\beta$ 2 shRNA Plasmid (m): sc-45906-SH, TR $\beta$ 2 shRNA (h) Lentiviral Particles: sc-45266-V and TR $\beta$ 2 shRNA (m) Lentiviral Particles: sc-45906-V.

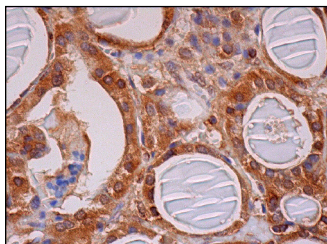
TR $\beta$ 2 (N-16) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Positive Controls: C32 whole cell lysate: sc-2205.

## RECOMMENDED SECONDARY REAGENTS

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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



TR $\beta$ 2 (N-16): sc-10824. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic and nuclear staining of glandular cells.

## SELECT PRODUCT CITATIONS

1. Fava, G., et al. 2006. Thyroid hormone inhibits biliary growth in bile duct-ligated rats by PLC/IP3/Ca<sup>2+</sup>-dependent downregulation of SRC/ERK1/2. *Am. J. Physiol., Cell Physiol.* 292: C1467-C1475.
2. Li, N., et al. 2012. Prolonged high iodine intake is associated with inhibition of type 2 deiodinase activity in pituitary and elevation of serum thyrotropin levels. *Br. J. Nutr.* 107: 674-682.