

TR α 1 (T-17): sc-10819

BACKGROUND

Thyroid hormone nuclear receptors (TRs) are ligand-dependent transcription factors which regulate growth, differentiation and development and represent members of the steroid/retinoic acid superfamily. The two genes encoding TRs identified to date, TR α and TR β , have been mapped to human chromosomes 17 and 3, respectively. 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 α , RXR β and RXR γ). To a certain extent, this activity is regulated by differential phosphorylation of TRs. Thus, not only are the biological activities of TRs regulated by heterodimerization with RXRs, but in addition, the gene regulatory activities of TRs are linked to other hormonal pathways. TR α 1 can display both a nuclear and undefined cytoplasmic location, and is the only TR that is imported into the mitochondrial matrix.

REFERENCES

- Näär, A., et al. 1991. The orientation and spacing of core DNA-binding motifs dictate selective transcriptional responses to three nuclear receptors. *Cell* 65: 1267-1271.
- Lazar, M.A. 1993. Thyroid hormone receptors: multiple forms, multiple possibilities. *Endocrinol. Rev.* 14: 184-193.
- Meier, C.A., et al. 1993. Interaction of human TR β 1 and its mutants with DNA and RXR β . T3 response element-dependent dominant negative potency. *J. Clin. Invest.* 92: 1986-1993.
- Zhang, X.K., et al. 1993. Hetero- and homodimeric receptors in thyroid hormone and vitamin A action. *Receptor* 3: 183-191.

CHROMOSOMAL LOCATION

Genetic locus: THRA (human) mapping to 17q21.1; Thra (mouse) mapping to 11 D.

SOURCE

TR α 1 (T-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of TR α 1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-10819 X, 200 μ g/0.1 ml.

Blocking peptide available for competition studies, sc-10819 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

TR α 1 (T-17) is recommended for detection of TR α 1 and TR α 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TR α 1 (T-17) is also recommended for detection of TR α 1 and TR α 2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for TR α siRNA (h): sc-36707, TR α siRNA (m): sc-36708, TR α shRNA Plasmid (h): sc-36707-SH, TR α shRNA Plasmid (m): sc-36708-SH, TR α shRNA (h) Lentiviral Particles: sc-36707-V and TR α shRNA (m) Lentiviral Particles: sc-36708-V.

Molecular Weight of TR α 1: 47 kDa.

TR α 1 (T-17) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Positive Controls: C32 whole cell lysate: sc-2205, human placenta extract: sc-363772 or rat liver extract: sc-2395.

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.

SELECT PRODUCT CITATIONS

- Mix, E., et al. 2004. Gene-expression profiling of the early stages of MOG-induced EAE proves EAE-resistance as an active process. *J. Neuroimmunol.* 151: 158-170.
- Ventura-Holman, T., et al. 2007. Thyroid hormone responsive genes in the murine hepatocyte cell line AML12. *Gene* 396: 332-337.
- Silvestri, E., et al. 2008. Age-related changes in renal and hepatic cellular mechanisms associated with variations in rat serum thyroid hormone levels. *Am. J. Physiol. Endocrinol. Metab.* 294: E1160-E1168.

RESEARCH USE

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


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Try **TR α 1/ α 2 (2103): sc-56873**, our highly recommended monoclonal alternative to TR α (T-17).