

# TR $\alpha$ (h2): 293T Lysate: sc-170626

## 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 $\alpha$  and TR $\beta$ , 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 $\alpha$ , RXR $\beta$  and RXR $\gamma$ ). 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 $\alpha$ 1 can display both a nuclear and undefined cytoplasmic location, and is the only TR that is imported into the mitochondrial matrix.

## REFERENCES

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2. Lazar, M.A. 1993. Thyroid hormone receptors: multiple forms, multiple possibilities. *Endocr. Rev.* 14: 184-193.
3. Meier, C.A., et al. 1993. Interaction of human TR $\beta$ 1 and its mutants with DNA and RXR $\beta$ . T3 response element-dependent dominant negative potency. *J. Clin. Invest.* 92: 1986-1993.
4. Zhang, X.K. and Pfahl, M. 1993. Hetero- and homodimeric receptors in thyroid hormone and vitamin A action. *Receptor* 3: 183-191.
5. Mangelsdorf, D.J., et al. 1994. The retinoid receptors. In Sporn, M.B., et al, eds. *The Retinoids: Biology, Chemistry, and Medicine*. New York: Raven Press, Ltd., 319-349.

## CHROMOSOMAL LOCATION

Genetic locus: THRA (human) mapping to 17q21.1.

## PRODUCT

TR $\alpha$ 1 (h2): 293T Lysate represents a lysate of human TR $\alpha$ 1 transfected 293T cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

## APPLICATIONS

TR $\alpha$  (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive TR $\alpha$  antibodies. Recommended use: 10-20  $\mu$ l per lane.

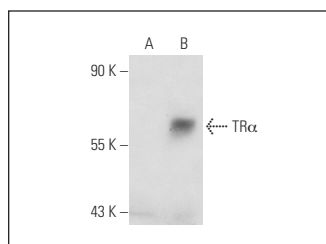
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

TR $\alpha$ 1/ $\beta$ 1 (C1): sc-739 is recommended as a positive control antibody for Western Blot analysis of enhanced human TR $\alpha$  expression in TR $\alpha$  transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:  
1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

## DATA



TR $\alpha$ 1/ $\beta$ 1 (C1): sc-739. Western blot analysis of TR $\alpha$  expression in non-transfected: sc-117752 (A) and human TR $\alpha$  transfected: sc-170626 (B) 293T whole cell lysates.

## STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## RESEARCH USE

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

## PROTOCOLS

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