

# TR $\alpha$ 2 (1330): sc-56875

## 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 signaling.

## REFERENCES

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- Meier, C.A., et al. 1993. Interaction of human  $\beta$  1 thyroid hormone receptor and its mutants with DNA and retinoid X receptor  $\beta$ . T3 response element-dependent dominant negative potency. *J. Clin. Invest.* 92: 1986-1993.
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- 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; Thra (mouse) mapping to 11 D.

## SOURCE

TR $\alpha$ 2 (1330) is a mouse monoclonal antibody raised against an N-terminal region of TR $\alpha$ 2 of human origin.

## PRODUCT

Each vial contains IgG<sub>1</sub> in 100  $\mu$ l containing 10 mM HEPES and 150 mM NaCl with < 0.1% sodium azide, 1% stabilizer protein and 25% glycerol.

## APPLICATIONS

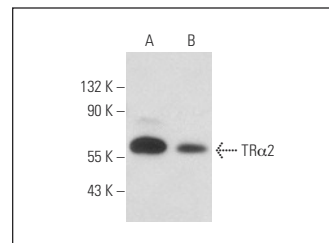
TR $\alpha$ 2 (1330) is recommended for detection of TR $\alpha$ 2 of mouse, rat and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:1000) and immunoprecipitation [1-2  $\mu$ l per 100-500  $\mu$ g of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for TR $\alpha$ 2 siRNA (h): sc-36707, TR $\alpha$ 2 siRNA (m): sc-36708, TR $\alpha$ 2 shRNA Plasmid (h): sc-36707-SH, TR $\alpha$ 2 shRNA Plasmid (m): sc-36708-SH, TR $\alpha$ 2 shRNA (h) Lentiviral Particles: sc-36707-V and TR $\alpha$ 2 shRNA (m) Lentiviral Particles: sc-36708-V.

Molecular Weight of TR $\alpha$ 2: 54.8 kDa.

Positive Controls: C32 whole cell lysate: sc-2205 or C32 nuclear extract: sc-2136.

## DATA



TR $\alpha$ 2 (1330): sc-56875. Western blot analysis of TR $\alpha$ 2 expression in C32 (A) and SK-N-MC (B) nuclear extracts.

## STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

## 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.