

# TR $\beta$ 1 (A-7): sc-398007

## 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 $\gamma$ ). The TR $\beta$  isoform TR $\beta$ 1 forms a complex with the PI 3-kinase p85 $\alpha$  subunit and plays an important role in the T3-induced activation of Akt in pancreatic  $\beta$  cells.

## REFERENCES

1. 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.
2. Lazar, M.A. 1993. Thyroid hormone receptors: multiple forms, multiple possibilities. *Endocrinol. Rev.* 14: 184-193.
3. Zhang, X.K., et al. 1993. Hetero- and homodimeric receptors in thyroid hormone and Vitamin A action. *Receptor* 3: 183-191.
4. Meier, C.A., et al. 1993. Interaction of human  $\beta$ 1 thyroid hormone receptor and its mutants with DNA and retinoid X receptor  $\beta$ . T<sub>3</sub> response element-dependent dominant negative potency. *J. Clin. Invest.* 92: 1986-1993.

## CHROMOSOMAL LOCATION

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

## SOURCE

TR $\beta$ 1 (A-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-27 at the N-terminus of TR $\beta$ 1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain 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-398007 X, 200  $\mu$ g/0.1 ml.

TR $\beta$ 1 (A-7) is available conjugated to agarose (sc-398007 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398007 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398007 PE), fluorescein (sc-398007 FITC), Alexa Fluor<sup>®</sup> 488 (sc-398007 AF488), Alexa Fluor<sup>®</sup> 546 (sc-398007 AF546), Alexa Fluor<sup>®</sup> 594 (sc-398007 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-398007 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-398007 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-398007 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398007 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

TR $\beta$ 1 (A-7) is recommended for detection of TR $\beta$ 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], 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).

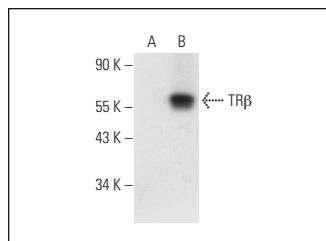
Suitable for use as control antibody for TR $\beta$ 1 siRNA (h): sc-38890, TR $\beta$ 1 siRNA (m): sc-38891, TR $\beta$ 1 shRNA Plasmid (h): sc-38890-SH, TR $\beta$ 1 shRNA Plasmid (m): sc-38891-SH, TR $\beta$ 1 shRNA (h) Lentiviral Particles: sc-38890-V and TR $\beta$ 1 shRNA (m) Lentiviral Particles: sc-38891-V.

TR $\beta$ 1 (A-7) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of TR $\beta$ 1: 55 kDa.

Positive Controls: TR $\beta$  (h): 293T Lysate: sc-369818.

## DATA



TR $\beta$ 1 (A-7): sc-398007. Western blot analysis of TR $\beta$  expression in non-transfected: sc-117752 (A) and human TR $\beta$  transfected: sc-369818 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Srivastava, J., et al. 2015. Astrocyte elevated gene-1 (AEG-1) contributes to non-thyroidal illness syndrome (NTIS) associated with hepatocellular carcinoma (HCC). *J. Biol. Chem.* 290: 15549-15558.
2. Sayem, A.S.M., et al. 2018. Differential expression of the receptors for thyroid hormone, thyroid stimulating hormone, vitamin D and retinoic acid and extracellular signal-regulated kinase in uterus of rats under influence of sex-steroids. *Biomed. Pharmacother.* 100: 132-141.
3. Salleh, N., et al. 2019. Expression of proteins related to thyroid hormone function in the uterus is down-regulated at the day of implantation in hypothyroid pregnant rats. *Cell Biol. Int.* E-published.

## 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.

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA