

TR α 1/ β 1 (C4): sc-740

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 α and TR β . 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). The TR α isoform, TR α 1, can display both a nuclear and undefined cytoplasmic location, and is the only TR that is imported into the mitochondrial matrix. The TR β isoform TR β 1 forms a complex with the PI 3-kinase p85 α subunit and plays an important role in the T3-induced activation of Akt in pancreatic β cells.

CHROMOSOMAL LOCATION

Genetic locus: THRA (human) mapping to 17q21.1, THRB (human) mapping to 3p24.2.

SOURCE

TR α 1/ β 1 (C4) is a mouse monoclonal antibody raised against an epitope mapping within the C-terminus of TR β 1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ 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-740 X, 200 μ g/0.1 ml.

TR α 1/ β 1 (C4) is available conjugated to agarose (sc-740 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-740 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-740 PE), fluorescein (sc-740 FITC), Alexa Fluor[®] 488 (sc-740 AF488), Alexa Fluor[®] 546 (sc-740 AF546), Alexa Fluor[®] 594 (sc-740 AF594) or Alexa Fluor[®] 647 (sc-740 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-740 AF680) or Alexa Fluor[®] 790 (sc-740 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

TR α 1/ β 1 (C4) is recommended for detection of TR α 1 and TR β 1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

TR α 1/ β 1 (C4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of TR α 1: 47 kDa.

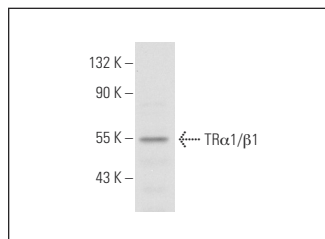
Molecular Weight of TR β 1: 58 kDa.

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

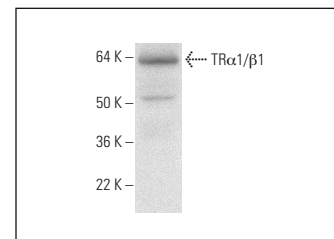
STORAGE

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

DATA



TR α 1/ β 1 (C4): sc-740. Western blot analysis of TR α 1/ β 1 expression in C32 whole cell lysate.



TR α 1/ β 1 (C4): sc-740. Western blot analysis of TR α 1/ β 1 expression in ZL (293 cells stably expressing TR β 1) whole cell lysate. Kindly provided by Sheue-Yann Chen at the National Institutes of Health.

SELECT PRODUCT CITATIONS

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3. Mochizuki, K., et al. 2007. De-phosphorylation of TR α -1 by p44/42 MAPK inhibition enhances T3-mediated GLUT5 gene expression in the intestinal cell line Caco-2 cells. *Biochem. Biophys. Res. Commun.* 359: 979-984.
4. Pietrzak, M., et al. 2008. Triiodothyronine utilizes phosphatidylinositol 3-kinase pathway to activate anti-apoptotic myeloid cell leukemia-1. *J. Mol. Endocrinol.* 41: 177-186.
5. Wu, S.M., et al. 2011. Cathepsin H regulated by the thyroid hormone receptors associate with tumor invasion in human hepatoma cells. *Oncogene* 30: 2057-2069.
6. Wang, Y., et al. 2013. Protective effect of taurine on down-regulated expression of thyroid hormone receptor genes in brains of mice exposed to arsenic. *Adv. Exp. Med. Biol.* 775: 155-166.
7. Zhang, D., et al. 2014. Thyroid hormone regulates muscle fiber type conversion via miR-133a1. *J. Cell Biol.* 207: 753-766.
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9. Flamini, M.I., et al. 2017. Thyroid hormone controls breast cancer cell movement via integrin $\alpha_v\beta_3$ /SRC/FAK/PI3-kinases. *Horm. Cancer* 8: 16-27.

RESEARCH USE

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