SANTA CRUZ BIOTECHNOLOGY, INC.

TGFβ RI (B-7): sc-518045

BACKGROUND

A total of three members of the TGFβ family, TGFβ1, TGFβ2 and TGFβ3, have been identified in mammals. Each is synthesized as a latent precursor that is subsequently cleaved forming the 112 amino acid growth factor which becomes active upon dimerization. TGFβs mediate their activity by high affinity binding to the type II receptor transmembrane protein with a cytoplasmic serine-threonine kinase domain. For signaling growth inhibition and early gene responses, TGFβ RII requires both its kinase activity and its association with a TGFβ-binding protein, designated TGFβ receptor type-1 (TGFβ RI). TGFβ RI is a 503 amino acid single-pass type I membrane protein that is expressed ubiquitously and, with TGFβ RII, functions as a receptor for TGFβ. Defects in the gene encoding TGFβ RI are the cause of aortic aneurysm familial thoracic type 5 (AAT5), Loeys-Dietz syndrome type 2A (LDS2A) and Loeys-Dietz syndrome type 1A (LDS1A).

REFERENCES

1. Anzano, M.A., et al. 1983. Sarcoma growth factor from conditioned medium of virally transformed cells is composed of both type α and type β transforming growth factors. Proc. Natl. Acad. Sci. USA 80: 6264-6268.
2. Derynck, R., et al. 1985. Human transforming growth factor-β cDNA sequence and expression in tumor cell lines. Nature 316: 701-705.
3. ten Dijke, P., et al. 1988. Identification of a new member of the transforming growth factor type β gene family. Proc. Natl. Acad. Sci. USA 85: 4715-4719.
4. Cheifetz, S., et al. 1990. Distinct transforming growth factor-β receptor subsets as determinants of cellular responsiveness to three TGFβ isoforms. J. Biol. Chem. 265: 20533-20538.
5. Wrana, J.L., et al. 1992. TGFβ signals through a heteromeric protein kinase receptor complex. Cell 71: 1003-1014.
6. Attisano, L., et al. 1993. Identification of human activin and TGFβ type I receptors that form heteromeric kinase complexes with type II receptors. Cell 75: 671-680.

CHROMOSOMAL LOCATION

Genetic locus: TGFBR1 (human) mapping to 9q22.33.

SOURCE

TGFβ RI (B-7) is a mouse monoclonal antibody raised against amino acids 26-125 mapping within an extracellular domain of TGFβ RI of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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.

APPLICATIONS

TGFβ RI (B-7) is recommended for detection of TGFβ RI of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 TGFβ RI siRNA (h): sc-40222, TGFβ RI shRNA Plasmid (h): sc-40222-SH and TGFβ RI shRNA (h) Lentiviral Particles: sc-40222-V.

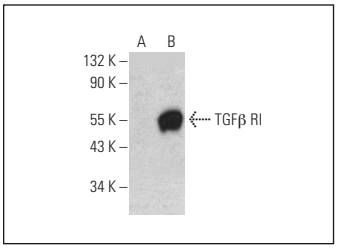
Molecular Weight of TGFβ RI: 53 kDa.

Positive Controls: human TGFβ RI transfected HEK293T whole cell lysate.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



TGFβ RI (B-7): sc-518045. Western blot analysis of TGFβ RI expression in non-transfected (**A**) and human TGFβ RI transfected (**B**) HEK293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Yuan, H., et al. 2019. Calcium—sensing receptor promotes high glucose—induced myocardial fibrosis via upregulation of the TGFβ1/Smads pathway in cardiac fibroblasts. Mol. Med. Rep. 20: 1093-1102.
2. Sun, X., et al. 2021. ALG3 contributes to stemness and radioresistance through regulating glycosylation of TGF-β receptor II in breast cancer. J. Exp. Clin. Cancer Res. 40: 149.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.