SANTA CRUZ BIOTECHNOLOGY, INC.

TGFβ RI (H-100): sc-9048

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

A total of three members of the TGFβ family, namely 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 TGFβ receptor type-II (TGFβ RII) 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).

CHROMOSOMAL LOCATION

Genetic locus: TGFBR1 (human) mapping to 9q22.33; Tgfbr1 (mouse) mapping to 4 B1.

SOURCE

TGFβ RI (H-100) is a rabbit polyclonal antibody raised against amino acids 26-125 mapping within the extracellular domain of TGFβ RI of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

TGFβ RI (H-100) is recommended for detection of TGFβ RI of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TGFβ RI (H-100) is also recommended for detection of TGFβ RI in additional species, including canine and porcine.

Suitable for use as control antibody for TGFβ RI siRNA (h): sc-40222, TGFβ RI siRNA (m): sc-40223, TGFβ RI shRNA Plasmid (h): sc-40222-SH, TGFβ RI shRNA Plasmid (m): sc-40223-SH, TGFβ RI shRNA (h) Lentiviral Particles: sc-40222-V and TGFβ RI shRNA (m) Lentiviral Particles: sc-40223-V.

Molecular Weight of TGFβ RI: 53 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, A549 cell lysate: sc-2413 or human platelet whole cell lysate: sc-363773.

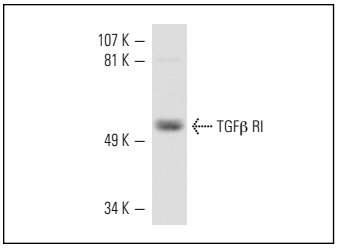
STORAGE

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

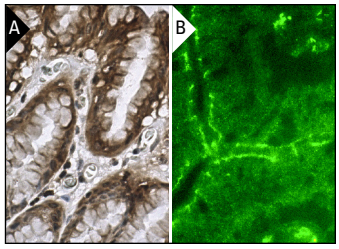
RESEARCH USE

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

DATA



TGFβ RI (H-100): sc-9048. Western blot analysis of TGFβ RI expression in human platelet whole cell lysate.



TGFβ RI (H-100): sc-9048. Immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach tissue showing membrane and cytoplasmic staining of glandular cells (**A**). Immunofluorescence staining of normal mouse intestine frozen section showing membrane staining (**B**).

SELECT PRODUCT CITATIONS

1. Zhao, H., et al. 2002. Transforming growth factor β_s and their receptors in aging rat prostate. Biochem. Biophys. Res. Commun. 294: 464-469.
2. Fanayan, S., et al. 2002. Signaling through the Smad pathway by insulin-like growth factor-binding protein-3 in breast cancer cells. Relationship to transforming growth factor-β 1 signaling. J. Biol. Chem. 277: 7255-7261.
3. Gao, Y., et al. 2009. TGF-β1 and TGFBR1 are expressed in ameloblasts and promote MMP20 expression. Anat. Rec. 292: 885-890.
4. Moyano, J.V., et al. 2010. Autocrine transforming growth factor-β1 activation mediated by integrin αVβ3 regulates transcriptional expression of laminin-332 in Madin-Darby canine kidney epithelial cells. Mol. Biol. Cell 21: 3654-68.
5. Chiang, T.A., et al. 2010. Hyperosmolarity enhanced susceptibility to renal tubular fibrosis by modulating catabolism of type I transforming growth factor-β receptors. J. Cell. Biochem. 109: 663-671.
6. Garamszegi, N., et al. 2010. Extracellular matrix-induced transforming growth factor-β receptor signaling dynamics. Oncogene 29: 2368-2380.
7. Baugé, C., et al. 2011. Modulation of transforming growth factor-β signalling pathway genes by transforming growth factor-β in human osteoarthritic chondrocytes: involvement of Sp1 in both early and late response cells to transforming growth factor-β. Arthritis. Res. Ther. 13: R23.
8. Vidya Priyadarsini, R., et al. 2012. Gene expression signature of DMBA-induced hamster buccal pouch carcinomas: modulation by chlorophyllin and ellagic acid. PLoS ONE 7: e34628.