

TGF β RI (T-19): sc-402

BACKGROUND

A total of three members of the TGF β family, namely TGF β 1, TGF β 2 and TGF β 3, 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. TGF β s mediate their activity by high affinity binding to the TGF β receptor type-II (TGF β RII) with a cytoplasmic serine-threonine kinase domain. For signaling growth inhibition and early gene responses, TGF β RII requires both its kinase activity and its association with a TGF β -binding protein, designated TGF β receptor type-1 (TGF β RI). TGF β RI is a 503 amino acid single-pass type I membrane protein that is expressed ubiquitously and, with TGF β RII, functions as a receptor for TGF β . Defects in the gene encoding TGF β 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.

SOURCE

TGF β RI (T-19) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of TGF β RI of human origin.

PRODUCT

Each vial contains 100 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-402 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TGF β RI (T-19) is recommended for the detection of the TGF β superfamily type I receptors ALK-1, ACTR-I, TGF β RI and, to a lesser extent ACTR-IB of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); may cross-react with ACTR-IC, BMPR-IA and BMPR-IB.

TGF β RI (T-19) is also recommended for detection of TGF β superfamily type I receptors ALK-1, ACTR-I, TGF β RI and, to a lesser extent ACTR-IB in additional species, including equine, canine, bovine, porcine and avian.

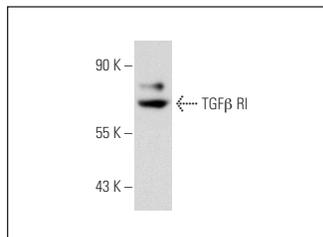
Molecular Weight of TGF β RI: 53 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409, SK-N-SH cell lysate: sc-2410 or A549 cell lysate: sc-2413.

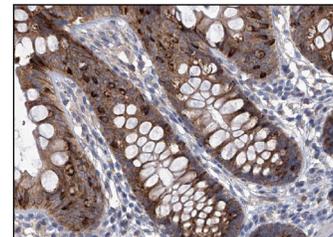
STORAGE

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

DATA



TGF β RI (T-19): sc-402. Western blot analysis of TGF β RI expression in IMR-32 whole cell lysate.



TGF β RI (T-19): sc-402. Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing cytoplasmic staining of glandular cells at high magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

1. Krymskaya, V.P., et al. 1997. TGF β 1 modulates EGF-stimulated phosphatidylinositol 3-kinase activity in human airway smooth muscle cells. *Am. J. Physiol.* 273: L1220-L1227.
2. Dünker, N. and Krieglstein, K. 2003. Reduced programmed cell death in the retina and defects in lens and cornea of TGF β 2^{-/-} TGF β 3^{-/-} double-deficient mice. *Cell Tissue Res.* 313: 1-10.
3. Franke, A.G., et al. 2006. Transforming growth factor- β and bone morphogenetic proteins: Cooperative players in chick and murine programmed retinal cell death. *J. Comp. Neurol.* 495: 263-267.
4. Gargiulo, S., et al. 2009. The core-aldehyde 9-oxononanoyl cholesterol increases the level of transforming growth factor β 1-specific receptors on promonocytic U937 cell membranes. *Aging Cell* 8: 77-87.
5. Walsh, S.B., et al. 2011. Cyclosporine a mediates pathogenesis of aggressive cutaneous squamous cell carcinoma by augmenting epithelial-mesenchymal transition: role of TGF β signaling pathway. *Mol. Carcinog.* 50: 516-527.
6. Cai, Y., et al. 2012. Overexpression of Smad ubiquitin regulatory factor 2 suppresses transforming growth factor- β mediated liver fibrosis. *J. Dig. Dis.* 13: 327-334.

RESEARCH USE

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



Try **TGF β RI (RM0016-3A11): sc-101574**, our highly recommended monoclonal alternative to TGF β RI (T-19).