

# TGF $\beta$ RII (E-6): sc-17792



The Power to Question

## BACKGROUND

A total of three members of the TGF $\beta$  family, TGF $\beta$ 1, TGF $\beta$ 2 and TGF $\beta$ 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 $\beta$ s mediate their activity by high affinity binding to the type II receptor (TGF $\beta$  RII) transmembrane protein with a cytoplasmic serine-threonine kinase domain. TGF $\beta$  RII (TGF- $\beta$  receptor type-2), also known as TGFBR2, is a 567 amino acid single-pass type I membrane protein that contains one protein kinase domain and is a member of the protein kinase superfamily, TKL Ser/Thr protein kinase family and TGF $\beta$  receptor subfamily. For signaling growth inhibition and early gene responses, TGF $\beta$  RII requires both its kinase activity and association with a TGF $\beta$ -binding protein, designated the type I receptor. TGF $\beta$  RII exists as two alternatively spliced isoforms that are encoded by a gene that maps to human chromosome 3p24.1.

## CHROMOSOMAL LOCATION

Genetic locus: TGFBR2 (human) mapping to 3p24.1; Tgfb2 (mouse) mapping to 9 F3.

## SOURCE

TGF $\beta$  RII (E-6) is a mouse monoclonal antibody raised against amino acids 1-567 of TGF $\beta$  RII of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TGF $\beta$  RII (E-6) is available conjugated to either Alexa Fluor<sup>®</sup> 546 (sc-17792 AF546) or Alexa Fluor<sup>®</sup> 594 (sc-17792 AF594), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-17792 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-17792 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

TGF $\beta$  RII (E-6) is recommended for detection of TGF $\beta$  RII of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), 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), 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).

Suitable for use as control antibody for TGF $\beta$  RII siRNA (h): sc-36657, TGF $\beta$  RII siRNA (m): sc-36658, TGF $\beta$  RII shRNA Plasmid (h): sc-36657-SH, TGF $\beta$  RII shRNA Plasmid (m): sc-36658-SH, TGF $\beta$  RII shRNA (h) Lentiviral Particles: sc-36657-V and TGF $\beta$  RII shRNA (m) Lentiviral Particles: sc-36658-V.

Molecular Weight (predicted) of TGF $\beta$  RII isoforms: 64/67 kDa.

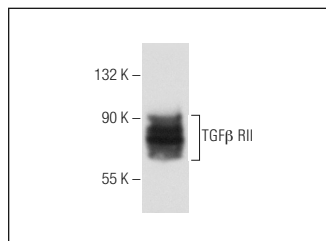
Molecular Weight of glycosylated TGF $\beta$  RII: 75-85 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, Hep G2 cell lysate: sc-2227 or KNRK whole cell lysate: sc-2214.

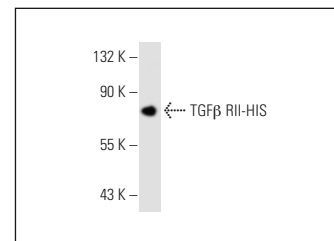
## STORAGE

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

## DATA



TGF $\beta$  RII (E-6): sc-17792. Western blot analysis of TGF $\beta$  RII expression in NIH/3T3 whole cell lysate.



TGF $\beta$  RII (E-6): sc-17792. Western blot analysis of HIS-tagged human recombinant TGF $\beta$  RII.

## SELECT PRODUCT CITATIONS

- Yang, J., et al. 2005. A novel mechanism by which hepatocyte growth factor blocks tubular epithelial to mesenchymal transition. *J. Am. Soc. Nephrol.* 16: 68-78.
- 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.
- Liu, C., et al. 2013. IQGAP1 suppresses T $\beta$ RII-mediated myofibroblastic activation and metastatic growth in liver. *J. Clin. Invest.* 123: 1138-1156.
- Holtzhausen, A., et al. 2014. Novel bone morphogenetic protein signaling through Smad2 and Smad3 to regulate cancer progression and development. *FASEB J.* 28: 1248-1267.
- Chang, T.P., et al. 2015. Bortezomib inhibits expression of TGF- $\beta$ 1, IL-10, and CXCR4, resulting in decreased survival and migration of cutaneous T cell lymphoma cells. *J. Immunol.* 194: 2942-2953.
- Cammareri, P., et al. 2016. Inactivation of TGF $\beta$  receptors in stem cells drives cutaneous squamous cell carcinoma. *Nat. Commun.* 7: 12493.
- Bian, S.S., et al. 2017. Clock1a affects mesoderm development and primitive hematopoiesis by regulating Nodal-Smad3 signaling in the zebrafish embryo. *J. Biol. Chem.* 292: 14165-14175.
- Wang, Y., et al. 2018. Local honokiol application inhibits intimal thickening in rabbits following carotid artery balloon injury. *Mol. Med. Rep.* 17: 1683-1689.
- Wang, Y., et al. 2019. Dysregulated Tgfb2/ERK-Smad4/SOX2 signaling promotes lung squamous cell carcinoma formation. *Cancer Res.* 79: 4466-4479.
- Pandolfi, L., et al. 2020. Loading imatinib inside targeted nanoparticles to prevent bronchiolitis obliterans syndrome. *Sci. Rep.* 10: 20726.

## 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