SANTA CRUZ BIOTECHNOLOGY, INC.

TGFβ RI (C-12): sc-518086

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).

CHROMOSOMAL LOCATION

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

SOURCE

TGFβ RI (C-12) 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_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TGFβ RI (C-12) is available conjugated to agarose (sc-518086 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-518086 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518086 PE), fluorescein (sc-518086 FITC), Alexa Fluor® 488 (sc-518086 AF488), Alexa Fluor® 546 (sc-518086 AF546), Alexa Fluor® 594 (sc-518086 AF594) or Alexa Fluor® 647 (sc-518086 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-518086 AF680) or Alexa Fluor® 790 (sc-518086 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

TGFβ RI (C-12) is recommended for detection of TGFβ RI of mouse, rat and 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).

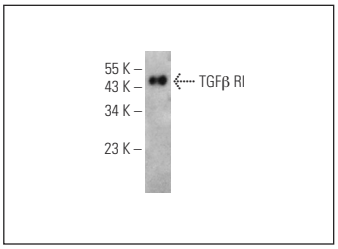
Suitable for use as control antibody for TGFβ RI siRNA (h): sc-40222, TGFβ RI siRNA (m): sc-40223, TGFβ RI shRNA Plasmid (h): sc-40222-SH, TGFβ RI shRNA Plasmid (m): sc-40223-SH, TGFβ RI shRNA (h) Lentiviral Particles: sc-40222-V and TGFβ RI shRNA (m) Lentiviral Particles: sc-40223-V.

Molecular Weight of TGFβ RI: 53 kDa.

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 (C-12): sc-518086. Western blot analysis of human recombinant TGFβ RI.

SELECT PRODUCT CITATIONS

1. Tejera-Muñoz, A., et al. 2021. CCN2 increases TGF-β receptor type II expression in vascular smooth muscle cells: essential role of CCN2 in the TGF-β pathway regulation. Int. J. Mol. Sci. 23: 375.
2. Lee, H., et al. 2022. CD82 attenuates TGF-β1-mediated epithelial-mesenchymal transition by blocking Smad-dependent signaling in ARPE-19 cells. Front. Pharmacol. 13: 991056.
3. Jiang, Y., et al. 2023. Core fucosylation regulates alveolar epithelial cells senescence through activating of transforming growth factor-β pathway in pulmonary fibrosis. Aging 15: 9572-9589.
4. Zhang, Q., et al. 2024. Gut microbiota regulates the ALK5/NOX1 axis by altering glutamine metabolism to inhibit ferroptosis of intrahepatic cholangiocarcinoma cells. Biochim. Biophys. Acta Mol. Basis Dis. 1870: 167152.

STORAGE

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

PROTOCOLS

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