SANTA CRUZ BIOTECHNOLOGY, INC.

ACTR-IC (S-19): sc-54158

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ACTR-IC (activin receptor type 1C), also referred to as activin receptor-like kinase 7 (ALK-7), is a type I serine/threonine kinase receptor. ACTA-IC contains an extracellular binding domain, an intracellular serine/threonine kinase domain preceded by a GS box and a transmembrane domain. It is expressed throughout the digestive and central nervous system and localizes to the cell surface. Four ACTR-IC transcripts are generated by alternative splicing. Transcript 1 is the functional full length receptor, transcript 2 lacks a complete receptor binding domain and transcripts 3 and 4 are soluble proteins that lack a transmembrane domain. ACTR-IC is a receptor for Activin AB, Activin B and Nodal. In pancreatic cells, ACTR-IC forms a complex with Activin receptor type IIB (ACTR-IIB). The kinase domain of ACTR-IC can induce Smad2 and Smad3 signalling pathways. In some cell lines, ACTR-IC overexpression induces apoptosis and inhibits proliferation.

REFERENCES

1. Ryden, M., et al. 1997. A novel type I receptor serine-threonine kinase predominantly expressed in the adult central nervous system. J. Biol. Chem. 271: 30603-30609.
2. Kim, B.C., et al. 2004. Activin receptor-like kinase-7 induces apoptosis through activation of MAPKs in a Smad3-dependent mechanism in hepatoma cells. J. Biol. Chem. 279: 28458-28465.
3. DaCosta Byfield, S., et al. 2004. SB-505124 is a selective inhibitor of transforming growth factor-β type I receptors ALK4, ALK5, and ALK7. Mol. Pharmacol. 65: 744-752.
4. Xu, G., et al. 2004. Nodal induces apoptosis and inhibits proliferation in human epithelial ovarian cancer cells via activin receptor-like kinase 7. J. Clin. Endocrinol. Metab. 89: 5523-5534.
5. Munir, S., et al. 2004. Nodal and ALK7 inhibit proliferation and induce apoptosis in human trophoblast cells. J. Biol. Chem. 279: 31277-31286.
6. Tojo, M., et al. 2005. The ALK-5 inhibitor A-83-01 inhibits Smad signaling and epithelial-to-mesenchymal transition by transforming growth factor-β. Cancer Sci. 96: 791-800.
7. Yeh, L.C., et al. 2005. Cartilage-derived morphogenetic proteins induce osteogenic gene expression in the C2C12 mesenchymal cell line. J. Cell. Biochem. 95: 173-188.
8. Zhang, N., et al. 2006. Activin receptor-like kinase 7 induces apoptosis of pancreatic β cells and β cell lines. Diabetologia 49: 506-518.

CHROMOSOMAL LOCATION

Genetic locus: ACVR1C (human) mapping to 2q24.1; Acvr1c (mouse) mapping to 2 C1.1.

SOURCE

ACTR-IC (S-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal extracellular domain of ACTR-IC 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.

Blocking peptide available for competition studies, sc-54158 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ACTR-IC (S-19) is recommended for detection of ACTR-IC of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

ACTR-IC (S-19) is also recommended for detection of ACTR-IC in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for ACTR-IC siRNA (h): sc-72337, ACTR-IC siRNA (m): sc-155862, ACTR-IC shRNA Plasmid (h): sc-72337-SH, ACTR-IC shRNA Plasmid (m): sc-155862-SH, ACTR-IC shRNA (h) Lentiviral Particles: sc-72337-V and ACTR-IC shRNA (m) Lentiviral Particles: sc-155862-V.

Molecular Weight of ACTR-IC: 55 kDa.

Positive Controls: T84 whole cell lysate: sc-364797.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.

PROTOCOLS

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