SANTA CRUZ BIOTECHNOLOGY, INC.

ACTR-IC (D-11): sc-376905

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

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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.
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CHROMOSOMAL LOCATION

Genetic locus: ACVR1C (human) mapping to 2q24.1.

SOURCE

ACTR-IC (D-11) is a mouse monoclonal antibody raised against amino acids 38-169 mapping near the N-terminus of ACTR-IC 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.

APPLICATIONS

ACTR-IC (D-11) is recommended for detection of ACTR-IC of 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 ACTR-IC siRNA (h): sc-72337, ACTR-IC shRNA Plasmid (h): sc-72337-SH and ACTR-IC shRNA (h) Lentiviral Particles: sc-72337-V.

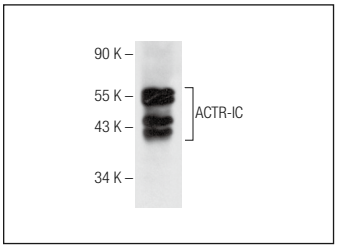
Molecular Weight of ACTR-IC: 55 kDa.

Positive Controls: T84 whole cell lysate: sc-364797 or MIA PaCa-2 cell lysate: sc-2285.

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



ACTR-IC (D-11): sc-376905. Western blot analysis of ACTR-IC expression in MIA PaCa-2 whole cell lysate.

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.