

ACTR-IC (A-1): sc-374538

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

- Ryden, M., et al. 1996. A novel type I receptor serine-threonine kinase predominantly expressed in the adult central nervous system. *J. Biol. Chem.* 271: 30603-30609.
- 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.
- 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.

CHROMOSOMAL LOCATION

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

SOURCE

ACTR-IC (A-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 139-175 within a cytoplasmic domain of ACTR-IC of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ACTR-IC (A-1) is available conjugated to agarose (sc-374538 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374538 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374538 PE), fluorescein (sc-374538 FITC), Alexa Fluor[®] 488 (sc-374538 AF488), Alexa Fluor[®] 546 (sc-374538 AF546), Alexa Fluor[®] 594 (sc-374538 AF594) or Alexa Fluor[®] 647 (sc-374538 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-374538 AF680) or Alexa Fluor[®] 790 (sc-374538 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374538 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

ACTR-IC (A-1) is recommended for detection of ACTR-IC isoforms 1 and 4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

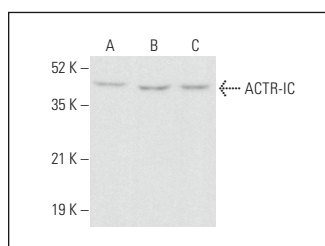
ACTR-IC (A-1) is also recommended for detection of ACTR-IC isoforms 1 and 4 in additional species, including bovine.

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.

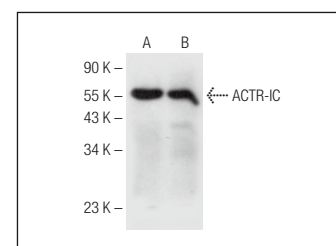
Molecular Weight of ACTR-IC: 55 kDa.

Positive Controls: T84 whole cell lysate: sc-364797, F9 cell lysate: sc-2245 or MIA PaCa-2 cell lysate: sc-2285.

DATA



ACTR-IC (A-1): sc-374538. Western blot analysis of ACTR-IC expression in Caki-1 (A), F9 (B) and EOC 20 (C) whole cell lysates. Detection reagent used: m-IgG κ BP-HRP: sc-516102.



ACTR-IC (A-1): sc-374538. Western blot analysis of ACTR-IC expression in T84 (A) and MIA PaCa-2 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Cheng, W.L., et al. 2021. ALK7 acts as a positive regulator of macrophage activation through down-regulation of PPAR γ expression. *J. Atheroscler. Thromb.* 28: 375-384.
- Cao, S., et al. 2022. Activin receptor-like kinase 7 promotes apoptosis of vascular smooth muscle cells via activating Smad2/3 signaling in diabetic atherosclerosis. *Front. Pharmacol.* 13: 926433.
- Peña-Zanoni, M., et al. 2022. Oophorectomy improves pituitary Activin inhibitory function preventing lactotroph hyperplasia development. *Endocr. Relat. Cancer* 29: 359-373.

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.