SANTA CRUZ BIOTECHNOLOGY, INC.

ACTR-I (C-5): sc-374523

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Members of the transforming growth factor β superfamily bind to a pair of transmembrane proteins, known as receptor types I and II, which contain serine/threonine kinases and associate to form a signaling complex. Activin has been shown to bind a heteromeric noncovalent complex, which consists of a type I receptor, ACTR-IA (also designated ACVRI and ALK-2) or ACTR-IB (also designated ALK-4 and SKR2), and a type II receptor, ACTR-IIA (also designated ACVR2A) or ACTR-IIB (also designated ACVR2B). Both receptor types are highly expressed in brain. The Activin receptor family members are thought to mediate distinct effects on gene expression, cell differentiation, and morphogenesis in a dose dependent fashion.

REFERENCES

1. Attisano, L., et al. 1993. Identification of human Activin and TGF β type I receptors that form heteromeric kinase complexes with type II receptors. Cell 75: 671-680.
2. Carcamo, J., et al. 1994. Type I receptors specify growth-inhibitory and transcriptional responses to transforming growth factor β and Activin. Mol. Cell. Biol. 14: 3810-3821.
3. Rosenzweig, B.L., et al. 1995. Cloning and characterization of a human type II receptor for bone morphogenetic proteins. Proc. Natl. Acad. Sci. USA 92: 7632-7636.

CHROMOSOMAL LOCATION

Genetic locus: ACVR1 (human) mapping to 2q24.1; Acvr1 (mouse) mapping to 2 C1.1.

SOURCE

ACTR-I (C-5) is a mouse monoclonal antibody raised against a peptide mapping at the N-terminus of ACTR-I of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ACTR-I (C-5) is available conjugated to agarose (sc-374523 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-374523 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374523 PE), fluorescein (sc-374523 FITC), Alexa Fluor® 488 (sc-374523 AF488), Alexa Fluor® 546 (sc-374523 AF546), Alexa Fluor® 594 (sc-374523 AF594) or Alexa Fluor® 647 (sc-374523 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374523 AF680) or Alexa Fluor® 790 (sc-374523 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374523 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

ACTR-I (C-5) is recommended for detection of ACTR-I 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).

ACTR-I (C-5) is also recommended for detection of ACTR-I in additional species, including equine, canine, bovine and porcine.

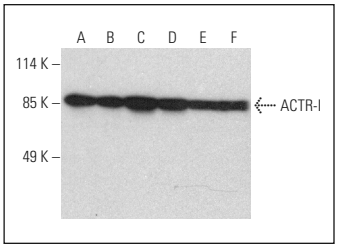
Suitable for use as control antibody for ACTR-I siRNA (h): sc-40202, ACTR-I siRNA (m): sc-40203, ACTR-I shRNA Plasmid (h): sc-40202-SH, ACTR-I shRNA Plasmid (m): sc-40203-SH, ACTR-I shRNA (h) Lentiviral Particles: sc-40202-V and ACTR-I shRNA (m) Lentiviral Particles: sc-40203-V.

Molecular Weight (predicted) of ACTR-I: 57 kDa.

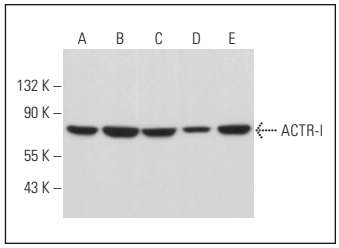
Molecular Weight (observed) of ACTR-I: 82 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A549 cell lysate: sc-2413 or U-87 MG cell lysate: sc-2411.

DATA



ACTR-I (C-5) HRP: sc-374523 HRP. Direct western blot analysis of ACTR-I expression in SK-N-SH (**A**), ES-2 (**B**), U-87 MG (**C**), A549 (**D**), HeLa (**E**) and Hep G2 (**F**) whole cell lysates.



ACTR-I (C-5): sc-374523. Western blot analysis of ACTR-I expression in U-87 MG (**A**), A549 (**B**), HeLa (**C**), Hep G2 (**D**) and NCI-H1299 (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Gurrapu, S., et al. 2019. Reverse signaling by semaphorin 4C elicits SMAD1/5- and ID1/3-dependent invasive reprogramming in cancer cells. Sci. Signal. 12: eaav2041.
2. Tan, Y., et al. 2020. MiR-148a regulates the stem cell-like side populations distribution by affecting the expression of ACVR1 in esophageal squamous cell carcinoma. Onco Targets Ther. 13: 8079-8094.
3. Lin, H., et al. 2020. Metformin attenuates trauma-induced heterotopic ossification via inhibition of bone morphogenetic protein signalling. J. Cell. Mol. Med. 24: 14491-14501.
4. Jang, J.H., et al. 2021. Bioactive lipid O-cyclic phytosphingosine-1-phosphate promotes differentiation of human embryonic stem cells into cardiomyocytes via ALK3/BMPR signaling. Int. J. Mol. Sci. 22: 7015.

STORAGE

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