

ACTR-IIA (D-9): sc-515826

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 (ACVR2A) or ACTR-IIB (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 manner.

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.
4. Armes, N.A., et al. 1997. The ALK-2 and ALK-4 activin receptors transduce distinct mesoderm-inducing signals during early *Xenopus* development but do not co-operate to establish thresholds. *Development* 124: 3797-3804.

CHROMOSOMAL LOCATION

Genetic locus: ACVR2A (human) mapping to 2q22.3; *Acvr2a* (mouse) mapping to 2 C1.1.

SOURCE

ACTR-IIA (D-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 114-135 within an N-terminal extracellular domain of ACTR-IIA of human origin.

PRODUCT

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

ACTR-IIA (D-9) is available conjugated to agarose (sc-515826 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515826 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515826 PE), fluorescein (sc-515826 FITC), Alexa Fluor[®] 488 (sc-515826 AF488), Alexa Fluor[®] 546 (sc-515826 AF546), Alexa Fluor[®] 594 (sc-515826 AF594) or Alexa Fluor[®] 647 (sc-515826 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-515826 AF680) or Alexa Fluor[®] 790 (sc-515826 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

ACTR-IIA (D-9) is recommended for detection of ACTR-IIA 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).

Suitable for use as control antibody for ACTR-IIA siRNA (h): sc-40206, ACTR-IIA siRNA (m): sc-40207, ACTR-IIA shRNA Plasmid (h): sc-40206-SH, ACTR-IIA shRNA Plasmid (m): sc-40207-SH, ACTR-IIA shRNA (h) Lentiviral Particles: sc-40206-V and ACTR-IIA shRNA (m) Lentiviral Particles: sc-40207-V.

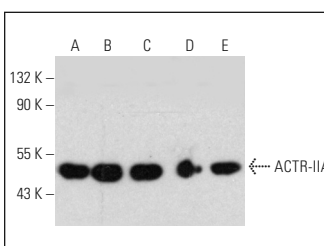
Molecular Weight of ACTR-IIA: 60 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, KNRK whole cell lysate: sc-2214 or HUV-EC-C whole cell lysate: sc-364180.

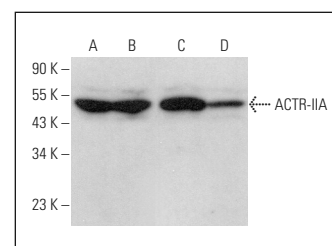
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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-IIA (D-9): sc-515826. Western blot analysis of ACTR-IIA expression in NRK (A), F9 (B), RPE-J (C), NIH/3T3 (D) and RAT2 (E) whole cell lysates.



ACTR-IIA (D-9): sc-515826. Western blot analysis of ACTR-IIA expression in K-562 (A), SJRH30 (B), HUV-EC-C (C) and KNRK (D) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Petrosino, J.M., et al. 2022. The m⁶A methyltransferase METTL3 regulates muscle maintenance and growth in mice. *Nat. Commun.* 13: 168.

RESEARCH USE

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

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