

ACTR-II (F-12): sc-390977

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 TGF 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, ACVR2B (human) mapping to 3p22.2.

SOURCE

ACTR-II (F-12) is a mouse monoclonal antibody raised against amino acids 396-460 of ACTR-IIA of human origin.

PRODUCT

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

ACTR-II (F-12) is available conjugated to agarose (sc-390977 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390977 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390977 PE), fluorescein (sc-390977 FITC), Alexa Fluor® 488 (sc-390977 AF488), Alexa Fluor® 546 (sc-390977 AF546), Alexa Fluor® 594 (sc-390977 AF594) or Alexa Fluor® 647 (sc-390977 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390977 AF680) or Alexa Fluor® 790 (sc-390977 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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

STORAGE

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

APPLICATIONS

ACTR-II (F-12) is recommended for detection of ACTR-IIA and ACTR-IIB of 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

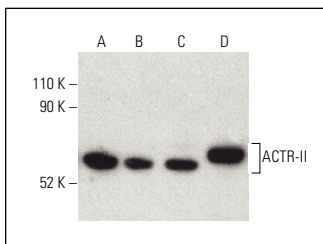
Molecular Weight of ACTR-II: 58 kDa.

Positive Controls: NTERA-2 cl.D1 whole cell lysate: sc-364181, Hep G2 cell lysate: sc-2227 or MDA-MB-231 cell lysate: sc-2232.

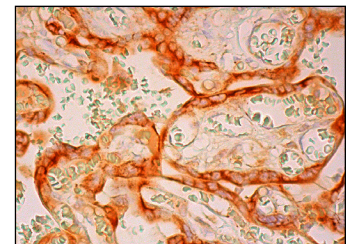
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



ACTR-II (F-12): sc-390977. Western blot analysis of ACTR-II expression in Hep G2 (A), NTERA-2 cl.D1 (B) and MDA-MB-231 (C) whole cell lysates and human small intestine tissue extract (D). Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



ACTR-II (F-12): sc-390977. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic and membrane staining of trophoblastic cells.

SELECT PRODUCT CITATIONS

1. Meseguer, S., et al. 2018. The MELAS mutation m.3243A>G promotes reactivation of fetal cardiac genes and an epithelial-mesenchymal transition-like program via dysregulation of miRNAs. *Biochim. Biophys. Acta Mol. Basis Dis.* 1864: 3022-3037.
2. Wu, R.L., et al. 2018. Hyaluronic acid-CD44 interactions promote BMP4/7-dependent Id1/3 expression in melanoma cells. *Sci. Rep.* 8: 14913.

RESEARCH USE

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