

# ACTR-IIA (N-17): sc-5667

## BACKGROUND

Members of the transforming growth factor  $\beta$  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 $\beta$  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  $\beta$  and Activin. *Mol. Cell. Biol.* 14: 3810-3821.

## CHROMOSOMAL LOCATION

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

## SOURCE

ACTR-IIA (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of ACTR-IIA of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-5667 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

ACTR-IIA (N-17) is recommended for detection of ACTR-IIA of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS

1. Refaat, B.A., et al. 2004. Production and localization of activins and Activin type IIA and IIB receptors by the human endosalpinx. *Reproduction* 128: 249-255.
2. Perron, J.C., et al. 2009. ACTR-IIA and BMPRII Type II BMP receptor subunits selectively required for Smad4-independent BMP7-evoked chemotaxis. *PLoS ONE* 4: e8198.
3. Upton, P.D., et al. 2009. Bone morphogenetic protein (BMP) and activin type II receptors balance BMP9 signals mediated by activin receptor-like kinase-1 in human pulmonary artery endothelial cells. *J. Biol. Chem.* 284: 15794-15804.
4. Mendis, S.H., et al. 2011. Activin A balances Sertoli and germ cell proliferation in the fetal mouse testis. *Biol. Reprod.* 84: 379-391.
5. Filby, C.E., et al. 2011. Stimulation of Activin A/Nodal signaling is insufficient to induce definitive endoderm formation of cord blood-derived unrestricted somatic stem cells. *Stem Cell Res. Ther.* 2: 16.
6. Hardy, C.L., et al. 2013. The activin A antagonist follistatin inhibits asthmatic airway remodelling. *Thorax* 68: 9-18.
7. Zhang, Q., et al. 2013. MicroRNA-181a suppresses mouse granulosa cell proliferation by targeting activin receptor IIA. *PLoS ONE* 8: e59667.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

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Try **ACTR-II (F-12): sc-390977**, our highly recommended monoclonal alternative to ACTR-IIA (N-17).