

# Arkadia (H-16): sc-21588

## BACKGROUND

Communication between cells during early embryogenesis establishes the basic organization of the vertebrate body plan. The early mammalian embryo is patterned by signals emanating from extraembryonic and embryonic signaling centers, most notably the anterior visceral endoderm (AVE) and the node, respectively. Nodal-related members of the transforming growth factor (TGF)- $\beta$  family regulate the induction of mesoderm, endoderm and mesendoderm. The different tissues form in response to the same signaling molecules, which may elicit differential responses through concentration-dependent effects, extracellular cofactors and antagonists, or factor potentiation. The nuclear protein Arkadia specifically potentiates the mesendoderm-inducing activity of a subset of TGF- $\beta$  family members and interacts with Nodal, which mediates the function of Arkadia in node induction. Arkadia functions within extraembryonic tissues and is required to induce the node as an essential modulator of the nodal signalling cascade. The human gene for arkadia maps to chromosome 15q22.1 and encodes a 441 amino acid protein. The murine gene for arkadia maps to chromosome 9 39.0 cM and encodes a 989 amino acid protein.

## REFERENCES

- Schier, A.F. and Shen, M.M. 2000. Nodal signalling in vertebrate development. *Nature* 403: 385-389.
- Episkopou, V., et al. 2001. Induction of the mammalian node requires Arkadia function in the extraembryonic lineages. *Nature* 410: 825-830.
- Niederlander, C., et al. 2001. Arkadia enhances nodal-related signalling to induce mesendoderm. *Nature* 410: 830-834.
- Patten, I. and Placzek, M. 2001. Vertebrate development: Et in Arkadia. *Curr. Biol.* 11: 616-619.

## CHROMOSOMAL LOCATION

Genetic locus: RNF111 (human) mapping to 15q22.1; Rnf111 (mouse) mapping to 9 D.

## SOURCE

Arkadia (H-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Arkadia 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-21588 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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.

## APPLICATIONS

Arkadia (H-16) is recommended for detection of Arkadia of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

Arkadia (H-16) is also recommended for detection of Arkadia in additional species, including equine, canine, bovine, porcine and avian.

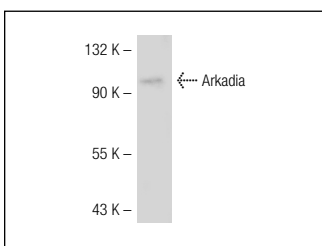
Suitable for use as control antibody for Arkadia siRNA (h): sc-40346, Arkadia siRNA (m): sc-40347, Arkadia shRNA Plasmid (h): sc-40346-SH, Arkadia shRNA Plasmid (m): sc-40347-SH, Arkadia shRNA (h) Lentiviral Particles: sc-40346-V and Arkadia shRNA (m) Lentiviral Particles: sc-40347-V.

Positive Controls: HeLa whole cell lysate: sc-2200.

## 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™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 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™ Mounting Medium: sc-24941.

## DATA



Arkadia (H-16): sc-21588. Western blot analysis of Arkadia expression in HeLa whole cell lysate.

## SELECT PRODUCT CITATIONS

- Koinuma, D., et al. 2011. RB1CC1 protein positively regulates transforming growth factor- $\beta$  signaling through the modulation of Arkadia E3 ubiquitin ligase activity. *J. Biol. Chem.* 286: 32502-32512.

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Try **Arkadia (1-KK14): sc-134270**, our highly recommended monoclonal alternative to Arkadia (H-16).