

# Anillin (A-2): sc-365181

## BACKGROUND

Anillin, also known as scraps homolog, is an evolutionarily conserved Actin-binding protein required for cytokinesis that was first identified in *Drosophila melanogaster*. Anillin is a ubiquitously expressed protein with highest expression levels in the central nervous system. It is predominantly found in the nucleus and it localizes to the cleavage furrow during cytokinesis, forming a ring with the help of Rac GTPase. During cytokinesis, Anillin interacts with CD2AP and functions to concentrate Rho A and maintain the localization of active Myosin. In Anillin knockout cells the cleavage furrow fails to complete ingression. Anillin expression levels fluctuate with the cell cycle, peaking in mitosis. Before the cell exits into G<sub>1</sub>, Anillin associates with E-cadherin and is ubiquitinated by the anaphase-promoting complex/cyclosome (APC/C). APC/C recognizes the D-box domain at the N-terminal region of Anillin. Anillin is commonly overexpressed in tumors and may serve as a potential biomarker.

## REFERENCES

1. Suzuki, C., et al. 2005. ANLN plays a critical role in human lung carcinogenesis through the activation of Rho A and by involvement in the phosphoinositide 3-kinase/Akt pathway. *Cancer Res.* 65: 11314-11325.
2. Zhao, W.M., et al. 2005. Anillin is a substrate of anaphase-promoting complex/cyclosome (APC/C) that controls spatial contractility of Myosin during late cytokinesis. *J. Biol. Chem.* 280: 33516-33524.
3. Hall, P.A., et al. 2005. The septin-binding protein Anillin is overexpressed in diverse human tumors. *Clin. Cancer Res.* 11: 6780-6786.
4. Mollinari, C., et al. 2005. Ablation of PRC1 by small interfering RNA demonstrates that cytokinetic abscission requires a central spindle bundle in mammalian cells, whereas completion of furrowing does not. *Mol. Biol. Cell* 16: 1043-1055.
5. Monzo, P., et al. 2005. Clues to CD2-associated protein involvement in cytokinesis. *Mol. Biol. Cell* 16: 2891-2902.
6. Zhao, W.M., et al. 2005. MGC Rac GAP controls the assembly of the contractile ring and the initiation of cytokinesis. *Proc. Natl. Acad. Sci. USA* 102: 13158-13163.
7. Gatt, M.K., et al. 2006. The *Drosophila* phosphatidylinositol transfer protein encoded by vibrator is essential to maintain cleavage-furrow ingression in cytokinesis. *J. Cell Sci.* 119: 2225-2235.
8. Engel, F.B., et al. 2006. Anillin localization defect in cardiomyocyte binucleation. *J. Mol. Cell. Cardiol.* 41: 601-612.

## CHROMOSOMAL LOCATION

Genetic locus: ANLN (human) mapping to 7p14.2; Anln (mouse) mapping to 9 A3.

## SOURCE

Anillin (A-2) is a mouse monoclonal antibody raised against amino acids 641-940 mapping near the C-terminus of Anillin of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Anillin (A-2) is recommended for detection of Anillin 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).

Suitable for use as control antibody for Anillin siRNA (h): sc-61970, Anillin siRNA (m): sc-61971, Anillin shRNA Plasmid (h): sc-61970-SH, Anillin shRNA Plasmid (m): sc-61971-SH, Anillin shRNA (h) Lentiviral Particles: sc-61970-V and Anillin shRNA (m) Lentiviral Particles: sc-61971-V.

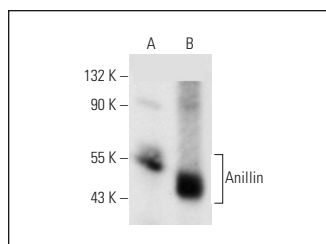
Molecular Weight of Anillin: 190 kDa.

Positive Controls: Anillin (h): 293T Lysate: sc-113842, JAR cell lysate: sc-2276 or HeLa whole cell lysate: sc-2200.

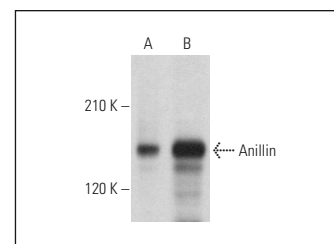
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



Anillin (A-2): sc-365181. Western blot analysis of Anillin expression in non-transfected: sc-117752 (A) and human Anillin transfected: sc-113842 (B) 293T whole cell lysates.



Anillin (A-2): sc-365181. Western blot analysis of Anillin expression in HeLa (A) and JAR (B) whole cell lysates.

## 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.