

Anillin (h): 293T Lysate: sc-113842

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 G₁, 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., Daigo, Y., Ishikawa, N., Kato, T., Hayama, S., Ito, T., Tsuchiya, E. and Nakamura, Y. 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. and Fang, G. 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., Todd, C.B., Hyland, P.L., McDade, S.S., Grabsch, H., Dattani, M., Hillan, K.J. and Russell, S.E. 2005. The Septin-binding protein Anillin is overexpressed in diverse human tumors. *Clin. Cancer Res.* 11: 6780-6786.
4. Mollinari, C., Kleman, J.P., Saoudi, Y., Jablonski, S.A., Perard, J., Yen, T.J. and Margolis, R.L. 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., Gauthier, N.C., Keslair, F., Loubat, A., Field, C.M., Le Marchand-Brustel, Y. and Cormont, M. 2005. Clues to CD2-associated protein involvement in cytokinesis. *Mol. Biol. Cell* 16: 2891-2902.
6. Zhao, W.M. and Fang, G. 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. and Glover, D.M. 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., Schebesta, M. and Keating, M.T. 2006. Anillin localization defect in cardiomyocyte binucleation. *J. Mol. Cell. Cardiol.* 41: 601-612.
9. Maddox, A.S., Lewellyn, L., Desai, A. and Oegema, K. 2007. Anillin and the septins promote asymmetric ingression of the cytokinetic furrow. *Dev. Cell* 12: 827-835.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

CHROMOSOMAL LOCATION

Genetic locus: ANLN (human) mapping to 7p14.2.

PRODUCT

Anillin (h): 293T Lysate represents a lysate of human Anillin transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Anillin (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive Anillin antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

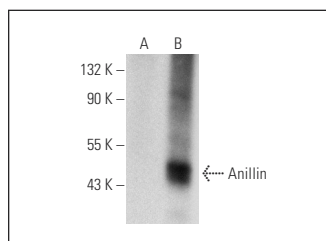
Anillin (B-10): sc-271814 is recommended as a positive control antibody for Western Blot analysis of enhanced human Anillin expression in Anillin transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

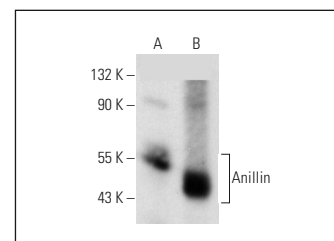
To ensure optimal results, the following support reagents are recommended:

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.

DATA



Anillin (B-10): sc-271814. 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 non-transfected: sc-117752 (A) and human Anillin transfected: sc-113842 (B) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.