

#3589 Store at -20°C

RCC1 Antibody


Cell Signaling
TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: WB, IF-IC	Reactivity: H M R Mk	Sensitivity: Endogenous	MW (kDa): 45	Source: Rabbit	UniProt ID: #P18754	Entrez-Gene Id: 1104
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Product Usage Information

Application

Western Blotting
Immunofluorescence (Immunocytochemistry)

Dilution

1:1000
1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

RCC1 Antibody recognizes endogenous levels of total RCC1 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues in the central region of human RCC1.

Background

The Ras family small GTPase Ran is involved in nuclear envelope formation, assembly of the mitotic spindle, and nuclear transport (1,2). Like other small GTPases, Ran is active in its GTP-bound form and inactive in its GDP-bound form. Nuclear RanGTP concentration is maintained through nuclear localization of guanine nucleotide exchange factor (GEF) activity, which catalyzes the exchange of bound GDP for GTP. Regulator of chromatin condensation 1 (RCC1) is the only known RanGEF (3). RCC1 is dynamically chromatin-bound throughout the cell cycle, and this localization is required for mitosis to proceed normally (4,5). Appropriate association of RCC1 with chromatin is regulated through amino-terminal phosphorylation (5,6) and methylation (7). RCC1 regulation of RanGTP levels in response to histone modifications regulates nuclear import during apoptosis (8). In mitosis RCC1 is phosphorylated at Ser11, possibly by cyclin B/cdc2 (9-11). This phosphorylation may play a role in RCC1 interaction with chromatin and RCC1 RanGEF activity (6).

Background References

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3. Moore, W. et al. (2002) *Curr Biol* 12, 1442-7.
4. Ohtsubo, M. et al. (1989) *J Cell Biol* 109, 1389-97.
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6. Hutchins, J.R. et al. (2004) *Curr Biol* 14, 1099-104.
7. Chen, T. et al. (2007) *Nat Cell Biol* 9, 596-603.
8. Wong, C.H. et al. (2009) *Nat Cell Biol* 11, 36-45.
9. Horiike, Y. et al. (2009) *Mol Biol Rep* 36, 717-23.
10. Dephoure, N. et al. (2008) *Proc Natl Acad Sci U S A* 105, 10762-7.
11. Hood, F.E. and Clarke, P.R. (2007) *J Cell Sci* 120, 3436-45.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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