

RAD21 (D213) Antibody

✓ 100 µl
(10 western blots)

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This product is for *in vitro* research use only and is not intended for use in humans or animals.
This product is not intended for use as a therapeutic or in diagnostic procedures.

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IP, IF-IC Endogenous	H, M, R, Mk, (Pg, C, B, Hr)	130 kDa	Rabbit**

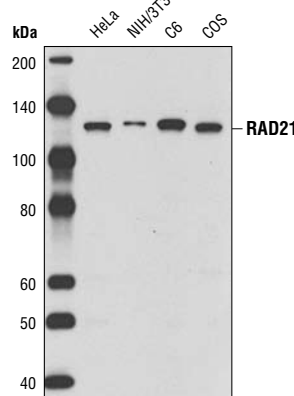
Background: The cohesin complex consists of a heterodimer between SMC1 (SMC1A or B) and SMC3, bound by additional RAD21 and STAG proteins (STAG1, 2 or 3) (1,2). These proteins form a ring-like structure that mediates the cohesion of two sister chromatids after DNA replication in S phase (1,2). RAD21 and STAG2 are phosphorylated by Polo-like kinase (PLK) during prophase, which leads to the dissociation of cohesin complexes from the chromosome arms; however, cohesin remains bound to centromeres until anaphase (3,4). RAD21 is cleaved by separin/ESPL1 in anaphase, which leads to dissociation of the remaining cohesin from centromeres, enabling sister chromatids to segregate during mitosis (5). RAD21 is also cleaved by caspase-3 and caspase-7 during apoptosis, resulting in a 64 kDa carboxy-terminal cleavage product that translocates to the cytoplasm and may help to trigger apoptosis (6,7). In addition to mediating cohesion of sister chromatids, the cohesin complex plays important roles in gene regulation and DNA repair, as SMC1 and SMC3 are both phosphorylated by ATM and ATR kinases upon DNA damage (1,2).

Specificity/Sensitivity: RAD21 (D213) Antibody detects endogenous levels of total RAD21 protein.

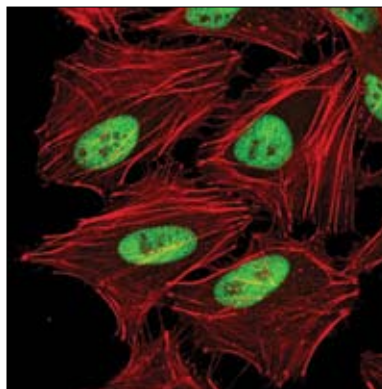
Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide (KLH-coupled) corresponding to the human RAD21 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background References:

- (1) Peters, J.M. et al. (2008) *Genes Dev* 22, 3089-114.
- (2) Barbero, J.L. (2009) *Cell Mol Life Sci* 66, 2025-35.
- (3) Hoque, M.T. and Ishikawa, F. (2001) *J Biol Chem* 276, 5059-67.
- (4) Hauf, S. et al. (2005) *PLoS Biol* 3, e69.
- (5) Hauf, S. et al. (2001) *Science* 293, 1320-3.
- (6) Pati, D. et al. (2002) *Mol Cell Biol* 22, 8267-77.
- (7) Chen, F. et al. (2002) *J Biol Chem* 277, 16775-81.



Western blot analysis of extracts from various cell lines using RAD21 (D213) Antibody.



Confocal immunofluorescent analysis of HeLa cells using RAD21 (D213) Antibody (green). Actin filaments were labeled with DY-554 phalloidin (red).

Entrez-Gene ID #5885
Swiss-Prot Acc. #060216

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.

*Species cross-reactivity is determined by western blot.

**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:

Western Blotting	1:1000
Immunoprecipitation	1:25
Immunofluorescence (IF-IC)	1:100

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

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

Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide
Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine
Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Hr All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.