SANTA CRUZ BIOTECHNOLOGY, INC.

# Rad21 (B-2): sc-271601

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Rad21 is one of the major cohesin subunits that holds sister chromatids together until anaphase, when proteolytic cleavage by separase, a caspase-like enzyme, allows chromosomal separation. Rad21 interacts with Rec8 to form a cohesin complex that functions in sister chromatid alignment. Rad21 is also involved in the repair of double-strand breaks in DNA and is essential for mitotic growth. Rad21 undergoes a C-terminal cleavage induced by diverse stimuli right before apoptosis. The cleavage product migrates to the cytoplasm where it is involved in early events in the apoptotic pathway and amplifies the cell death signal in a positive feedback manner. The Rad21 gene is related to the invasion and metastasis of cancer cells, and Rad21 is a potential target for cancer therapeutics that may enhance the antitumor activity of chemotherapeutic agents acting through the induction of DNA damage.

## CHROMOSOMAL LOCATION

Genetic locus: RAD21 (human) mapping to 8q24.11; Rad21 (mouse) mapping to 15 C.

## SOURCE

Rad21 (B-2) is a mouse monoclonal antibody raised against amino acids 143-352 mapping within an internal region of Rad21 of human origin.

## PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

Rad21 (B-2) is recommended for detection of Rad21 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).

Rad21 (B-2) is also recommended for detection of Rad21 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Rad21 siRNA (h): sc-72049, Rad21 siRNA (m): sc-72050, Rad21 shRNA Plasmid (h): sc-72049-SH, Rad21 shRNA Plasmid (m): sc-72050-SH, Rad21 shRNA (h) Lentiviral Particles: sc-72049-V and Rad21 shRNA (m) Lentiviral Particles: sc-72050-V.

Molecular Weight of Rad21: 68 kDa.

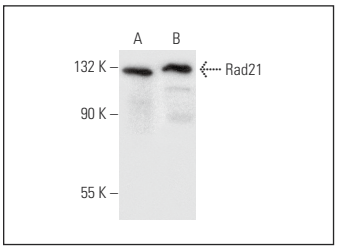
MMolecular Weight of phosphorlyated Rad 21: 110-120 kDa.

Positive Controls: MOLT-4 nuclear extract: sc-2151, HeLa nuclear extract: sc-2120 or NIH/3T3 nuclear extract: sc-2138.

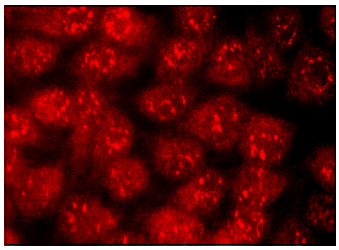
## RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (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




Rad21 (B-2): sc-271601. Western blot analysis of Rad21 expression in HeLa (**A**) and NIH/3T3 (**B**) nuclear extracts.



Rad21 (B-2): sc-271601. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

## SELECT PRODUCT CITATIONS


1. Kim, J.S., et al. 2016. Intact cohesion, anaphase, and chromosome segregation in human cells harboring tumor-derived mutations in STAG2. PLoS Genet. 12: e1005865.
2. Hellmuth, S., et al. 2018. Local activation of mammalian separase in interphase promotes double-strand break repair and prevents oncogenic transformation. EMBO J. 37: e99184.
3. Wagner, K., et al. 2019. The SUMO isopeptidase SENP6 functions as a rheostat of chromatin residency in genome maintenance and chromosome dynamics. Cell Rep. 29: 480-494.e5.
4. Hellmuth, S., et al. 2020. Securin-independent regulation of separase by checkpoint-induced shugoshin-MAD2. Nature 580: 536-541.
5. Schick, M., et al. 2022. Genetic alterations of the SUMO isopeptidase SENP6 drive lymphomagenesis and genetic instability in diffuse large B-cell lymphoma. Nat. Commun. 13: 281.
6. Wu, Z., et al. 2022. cccDNA surrogate MC-HBV-based screen identifies cohesin complex as a novel HBV restriction factor. Cell. Mol. Gastroenterol. Hepatol. 14: 1177-1198.


## 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.