

Rad21 (Q-20): sc-54325

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. Rad 21 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.

REFERENCES

1. Sook Kim, M., et al. 2001. Human Rad21 gene, hHR21(SP), is downregulated by hypoxia in human tumor cells. *Biochem. Biophys. Res. Commun.* 281: 1106-1112.
2. Lee, J., et al. 2002. Analyses of mRNA expression patterns of cohesin subunits Rad21 and Rec8 in mice: germ cell-specific expression of Rec8 mRNA in both male and female mice. *Zool. Sci.* 19: 539-544.
3. Pati, D., et al. 2002. Linking sister chromatid cohesion and apoptosis: role of Rad21. *Mol. Cell. Biol.* 22: 8267-8277.
4. Prieto, I., et al. 2002. STAG2 and Rad21 mammalian mitotic cohesins are implicated in meiosis. *EMBO Rep.* 3: 543-550.
5. Parra, M.T., et al. 2004. Involvement of the cohesin Rad21 and SCP3 in monopolar attachment of sister kinetochores during mouse meiosis I. *J. Cell Sci.* 117: 1221-1234.
6. Xu, H., et al. 2004. A new role for the mitotic RAD21/SCC1 cohesin in meiotic chromosome cohesion and segregation in the mouse. *EMBO Rep.* 5: 378-384.
7. Atienza, J.M., et al. 2005. Suppression of RAD21 gene expression decreases cell growth and enhances cytotoxicity of etoposide and bleomycin in human breast cancer cells. *Mol. Cancer Ther.* 4: 361-368.

CHROMOSOMAL LOCATION

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

SOURCE

Rad21 (Q-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Rad21 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-54325 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Rad21 (Q-20) is recommended for detection of Rad21 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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 (Q-20) is also recommended for detection of Rad21 in additional species, including equine.

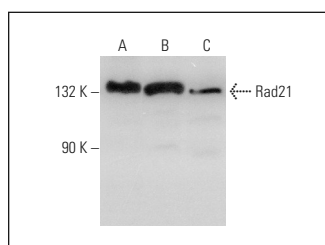
Suitable for use as control antibody for Rad21 siRNA (h): sc-72049, Rad21 siRNA (m): sc-72050, Rad21 shRNA Plasmid (h): sc-72049-SH, Rad21 shRNA Plasmid (m): sc-72050-SH, Rad21 shRNA (h) Lentiviral Particles: sc-72049-V and Rad21 shRNA (m) Lentiviral Particles: sc-72050-V.

Molecular Weight of Rad21: 68 kDa.

Molecular Weight of phosphorylated Rad21: 110-120 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, MOLT-4 nuclear extract: sc-2151 or HEK293 whole cell lysate: sc-45136.

DATA



Rad21 (Q-20): sc-54325. Western blot analysis of Rad21 expression in HeLa (A) and MOLT-4 (B) nuclear extracts and HEK293 whole cell lysate (C).

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.

PROTOCOLS

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

MONOS
Satisfaction
Guaranteed

Try **Rad21 (B-2): sc-271601** or **Rad21 (H-12): sc-166973**, our highly recommended monoclonal alternatives to Rad21 (Q-20).