SANTA CRUZ BIOTECHNOLOGY, INC.

Rad50 (H-300): sc-20155

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Rad52 family members (Rad50, Rad51B/C/D, Rad52, Rad54, MRE11) mediate DNA double-strand break repair (DSBR) for DNA damage that otherwise could cause cell death, mutation or neoplastic transformation. Rad51 (RECA, BRCC5) interacts with BRCA1 and BRCA2 to influence subcellular localization and cellular response to DNA damage. BRCA2 inactivation may be a key event leading to genomic instability and tumorigenesis from deregulation of Rad51. Rad52 forms a heptameric ring that binds single-stranded DNA ends and catalyzes DNA-DNA interaction necessary for the annealing of complementary strands. Rad54A of the DEAD-like helicase superfamily binds to double-stranded DNA and induces a DNA topological change, which is thought to facilitate homologous DNA pairing and stimulate DNA recombination. Rad54B of the DEAD-like helicase superfamily binds to double-stranded DNA and displays ATPase activity in the presence of DNA. Rad54B is abundant in testis and spleen, and mutations of this gene occur in primary lymphoma and colon cancer.

CHROMOSOMAL LOCATION

Genetic locus: RAD50 (human) mapping to 5q31.1; Rad50 (mouse) mapping to 11 B1.3.

SOURCE

Rad50 (H-300) is a rabbit polyclonal antibody raised against amino acids 1013-1312 mapping at the C-terminus of Rad50 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.

APPLICATIONS

Rad50 (H-300) is recommended for detection of Rad50 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).

Rad50 (H-300) is also recommended for detection of Rad50 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Rad50 siRNA (h): sc-37397, Rad50 siRNA (m): sc-37398, Rad50 shRNA Plasmid (h): sc-37397-SH, Rad50 shRNA Plasmid (m): sc-37398-SH, Rad50 shRNA (h) Lentiviral Particles: sc-37397-V and Rad50 shRNA (m) Lentiviral Particles: sc-37398-V.

Molecular Weight of Rad50: 150 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, K-562 nuclear extract: sc-2130 or Jurkat nuclear extract: sc-2132.

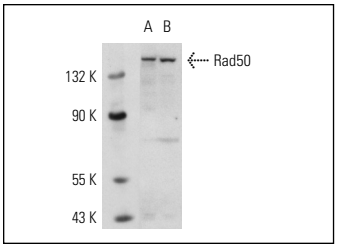
STORAGE

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

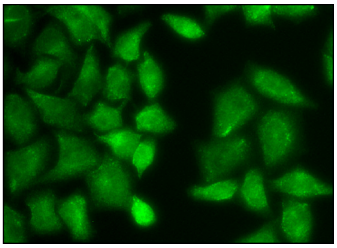
RESEARCH USE

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

DATA



Rad50 (H-300): sc-20155. Western blot analysis of Rad50 expression in HeLa (**A**) and K-562 (**B**) nuclear extracts.



Rad50 (H-300): sc-20155. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear and cytoplasmic localization. Kindly provided by Yang Xiang, Ph.D., Division of Newborn Medicine, Boston Children's Hospital, Cell Biology Department, Harvard Medical School.

SELECT PRODUCT CITATIONS

1. Rapp, A., et al. 2004. After double-strand break induction by UV-A, homologous recombination and nonhomologous end joining cooperate at the same DSB if both systems are available. J. Cell Sci. 117: 4935-4945.
2. Taylor, T.J., et al. 2004. Proteomics of herpes simplex virus replication compartments: association of cellular DNA replication, repair, recombination, and chromatin remodeling proteins with ICP8. J. Virol. 78: 5856-5866.
3. Kamimura, K., et al. 2007. Lack of Bcl-11b tumor suppressor results in vulnerability to DNA replication stress and damages. Oncogene 26: 5840-5850.
4. Yin, H., et al. 2011. The phenotypic radiation resistance of CD44$^+$/CD24(-or low) breast cancer cells is mediated through the enhanced activation of ATM signaling. PLoS ONE 6: e24080.
5. Sousa, M.M., et al. 2013. An inverse switch in DNA base excision and strand break repair contributes to melphalan resistance in multiple myeloma cells. PLoS ONE 8: e55493.

PROTOCOLS

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