

Rad54 (H-152): sc-11428

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. Rad52 can interact with Rad51. Rad54A of the DEAD-like helicase superfamily binds to double-strand 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. MRE11 (meiotic recombination 11, ATLD, HNGS1) is a nuclear 3'-5' exonuclease/endonuclease that associates with Rad50 and influences homologous recombination, telomere length maintenance, and DNA double-strand break repair. MRE11 is most abundant in proliferating tissues.

CHROMOSOMAL LOCATION

Genetic locus: RAD54L (human) mapping to 1p34.1; Rad54l (mouse) mapping to 4 D1.

SOURCE

Rad54 (H-152) is a rabbit polyclonal antibody raised against amino acids 1-152 mapping at the N-terminus of Rad54 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

Rad54 (H-152) is recommended for detection of Rad54 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Rad54 (H-152) is also recommended for detection of Rad54 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Rad54 siRNA (h): sc-36362, Rad54 siRNA (m): sc-36363, Rad54 shRNA Plasmid (h): sc-36362-SH, Rad54 shRNA Plasmid (m): sc-36363-SH, Rad54 shRNA (h) Lentiviral Particles: sc-36362-V and Rad54 shRNA (m) Lentiviral Particles: sc-36363-V.

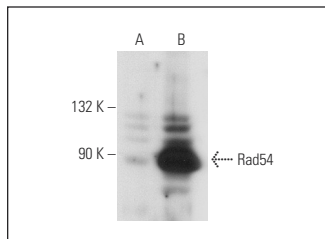
Molecular Weight of Rad54: 85 kDa.

Positive Controls: Rad54 (m): 293T Lysate: sc-125883, Jurkat nuclear extract: sc-2132 or Ramos nuclear extract: sc-2153.

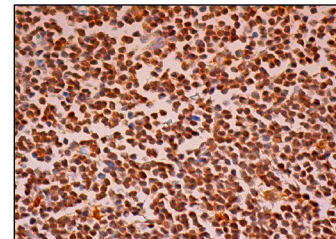
STORAGE

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

DATA



Rad54 (H-152): sc-11428. Western blot analysis of Rad54 expression in non-transfected: sc-117752 (A) and mouse Rad54 transfected: sc-125883 (B) 293T whole cell lysates.



Rad54 (H-152): sc-11428. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing nuclear staining of cells in non-germinal center.

SELECT PRODUCT CITATIONS

1. Trojanek, J., et al. 2003. Role of the Insulin-like growth factor I/Insulin receptor substrate 1 axis in Rad51 trafficking and DNA repair by homologous recombination. *Mol. Cell. Biol.* 23: 7510-7524.
2. Wang, J.Y., et al. 2005. Impaired homologous recombination DNA repair and enhanced sensitivity to DNA damage in prostate cancer cells exposed to anchorage-independence. *Oncogene* 24: 3748-3758.
3. Otterlei, M., et al. 2006. Werner syndrome protein participates in a complex with Rad51, Rad54, Rad54B and ATR in response to ICL-induced replication arrest. *J. Cell Sci.* 119: 5137-5146.
4. Trojanek, J., et al. 2006. T-antigen of the human polyomavirus JC attenuates faithful DNA repair by forcing nuclear interaction between IRS-1 and Rad51. *J. Cell. Physiol.* 206: 35-46.
5. Trojanek, J., et al. 2006. IRS-1-Rad51 nuclear interaction sensitizes JCV T-antigen positive medulloblastoma cells to genotoxic treatment. *Int. J. Cancer* 119: 539-548.

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 **Rad54 (F-11): sc-374598** or **Rad54 (4E3/1): sc-53433**, our highly recommended monoclonal alternatives to Rad54 (H-152).