SANTA CRUZ BIOTECHNOLOGY, INC.

Rad51 (F-11): sc-398587

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. 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: RAD51 (human) mapping to 15q15.1; Rad51 (mouse) mapping to 2 E5.

SOURCE

Rad51 (F-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 311-339 at the C-terminus of Rad51 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Rad51 (F-11) is available conjugated to agarose (sc-398587 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398587 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398587 PE), fluorescein (sc-398587 FITC), Alexa Fluor® 488 (sc-398587 AF488), Alexa Fluor® 546 (sc-398587 AF546), Alexa Fluor® 594 (sc-398587 AF594) or Alexa Fluor® 647 (sc-398587 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398587 AF680) or Alexa Fluor® 790 (sc-398587 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398587 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

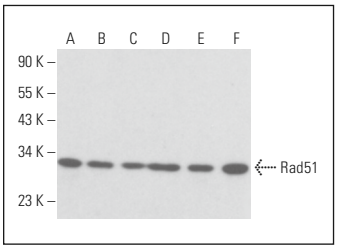
Rad51 (F-11) is recommended for detection of Rad51 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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).

Suitable for use as control antibody for Rad51 siRNA (h): sc-36361, Rad51 siRNA (m): sc-36360, Rad51 shRNA Plasmid (h): sc-36361-SH, Rad51 shRNA Plasmid (m): sc-36360-SH, Rad51 shRNA (h) Lentiviral Particles: sc-36361-V and Rad51 shRNA (m) Lentiviral Particles: sc-36360-V.

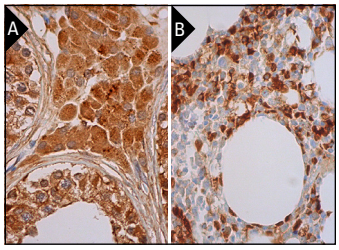
Molecular Weight of Rad51: 37 kDa.

Positive Controls: MEG-01 cell lysate: sc-2283, SJRH30 cell lysate: sc-2287 or F9 cell lysate: sc-2245.

DATA



Rad51 (F-11): sc-398587. Western blot analysis of Rad51 expression in MEG-01 (**A**), SJRH30 (**B**), F9 (**C**), BYDP (**D**) and Neuro-2A (**E**) whole cell lysates and WEHI-231 nuclear extract (**F**).



Rad51 (F-11): sc-398587. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic and nuclear staining of cells in seminiferous ducts and Legdig cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human bone marrow tissue showing nuclear and cytoplasmic staining of subset of hematopoietic cells (**B**).

SELECT PRODUCT CITATIONS

1. Cheng, Y., et al. 2017. Alleviation of toxicity caused by overactivation of PPARα through PPARα-inducible miR-181a2. Mol. Ther. Nucleic Acids 9: 195-206.
2. Shin, J., et al. 2018. Prognostic impact of DNA repair protein expression in non-small cell lung cancers treated with platinum-based chemotherapy and subsequent curative lung resection. Oncology 95: 20-30.
3. Hu, Q., et al. 2019. Break-induced replication plays a prominent role in long-range repeat-mediated deletion. EMBO J. 38: e101751.
4. Qian, Y., et al. 2020. PAK1 silencing is synthetic lethal with Cdk4/6 inhibition in gastric cancer cells via regulating PDK1 expression. Hum. Cell 33: 377-385.
5. Mehta, R.K., et al. 2020. Low dose Hsp90 inhibitor selectively radiosensitizes HNSCC and pancreatic xenografts. Clin. Cancer Res. 26: 5246-5257.

RESEARCH USE

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