

Rad51D (C-1): sc-398819

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: RAD51D (human) mapping to 17q12; Rad51d (mouse) mapping to 11 C.

SOURCE

Rad51D (C-1) is a mouse monoclonal antibody raised against amino acids 233-328 mapping at the C-terminus of Rad51D of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Rad51D (C-1) is available conjugated to agarose (sc-398819 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398819 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398819 PE), fluorescein (sc-398819 FITC), Alexa Fluor[®] 488 (sc-398819 AF488), Alexa Fluor[®] 546 (sc-398819 AF546), Alexa Fluor[®] 594 (sc-398819 AF594) or Alexa Fluor[®] 647 (sc-398819 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-398819 AF680) or Alexa Fluor[®] 790 (sc-398819 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

PROTOCOLS

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

APPLICATIONS

Rad51D (C-1) is recommended for detection of Rad51D 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).

Suitable for use as control antibody for Rad51D siRNA (h): sc-44933, Rad51D siRNA (m): sc-44934, Rad51D shRNA Plasmid (h): sc-44933-SH, Rad51D shRNA Plasmid (m): sc-44934-SH, Rad51D shRNA (h) Lentiviral Particles: sc-44933-V and Rad51D shRNA (m) Lentiviral Particles: sc-44934-V.

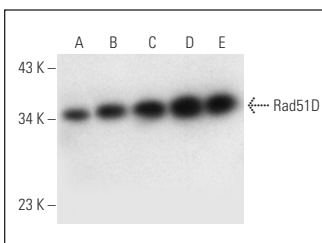
Molecular Weight of Rad51D: 33 kDa.

Positive Controls: NTERA-2 cl.D1 whole cell lysate: sc-364181, ES-2 cell lysate: sc-24674 or HEK293 whole cell lysate: sc-45136.

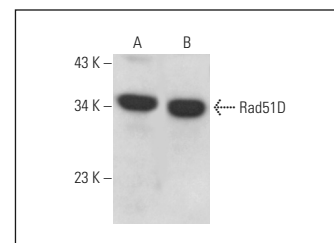
RECOMMENDED SUPPORT REAGENTS

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 A/G PLUS-Agarose: sc-2003 (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



Rad51D (C-1): sc-398819. Western blot analysis of Rad51D expression in NTERA-2 cl.D1 (A), ES-2 (B), HEK293 (C), Jurkat (D) and COLO 320DM (E) whole cell lysates.



Rad51D (C-1): sc-398819. Western blot analysis of Rad51D expression in ES-2 (A) and A549 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Kondrashova, O., et al. 2017. Secondary somatic mutations restoring Rad51C and Rad51D associated with acquired resistance to the PARP inhibitor rucaparib in high-grade ovarian carcinoma. *Cancer Discov.* 7: 984-998.
- Baldock, R.A., et al. 2019. Rad51D splice variants and cancer-associated mutations reveal XRCC2 interaction to be critical for homologous recombination. *DNA Repair* 76: 99-107.

RESEARCH USE

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