

Rad52 (F-7): sc-365341

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.

CHROMOSOMAL LOCATION

Genetic locus: RAD52 (human) mapping to 12p13.33; Rad52 (mouse) mapping to 6 F1.

SOURCE

Rad52 (F-7) is a mouse monoclonal antibody raised against amino acids 119-418 mapping at the C-terminus of Rad52 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.

Rad52 (F-7) is available conjugated to agarose (sc-365341 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365341 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365341 PE), fluorescein (sc-365341 FITC), Alexa Fluor[®] 488 (sc-365341 AF488), Alexa Fluor[®] 546 (sc-365341 AF546), Alexa Fluor[®] 594 (sc-365341 AF594) or Alexa Fluor[®] 647 (sc-365341 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-365341 AF680) or Alexa Fluor[®] 790 (sc-365341 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Rad52 (F-7) is recommended for detection of Rad52 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).

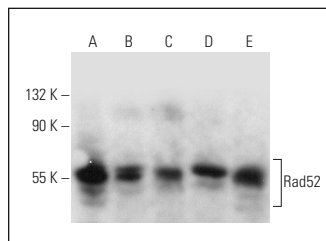
Suitable for use as control antibody for Rad52 siRNA (h): sc-37399, Rad52 siRNA (m): sc-37400, Rad52 shRNA Plasmid (h): sc-37399-SH, Rad52 shRNA Plasmid (m): sc-37400-SH, Rad52 shRNA (h) Lentiviral Particles: sc-37399-V and Rad52 shRNA (m) Lentiviral Particles: sc-37400-V.

Molecular Weight of Rad52: 48 kDa.

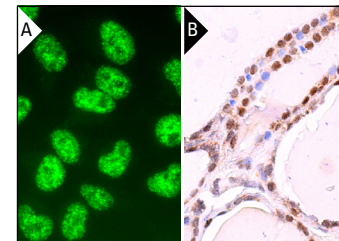
STORAGE

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

DATA



Rad52 (F-7): sc-365341. Western blot analysis of Rad52 expression in HCT-116 (A), SK-MEL-28 (B), HeLa (C), HEK293 (D) and Raji (E) whole cell lysates.



Rad52 (F-7): sc-365341. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing nuclear staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Zhang, Y., et al. 2011. Different expression of alternative lengthening of telomere (ALT)-associated proteins/mRNAs in osteosarcoma cell lines. *Oncol. Lett.* 2: 1327-1332.
- Qi, W., et al. 2015. BRG1 promotes the repair of DNA double-strand breaks by facilitating the replacement of RPA with Rad51. *J. Cell Sci.* 128: 317-330.
- Hromas, R., et al. 2017. The endonuclease EEPD1 mediates synthetic lethality in Rad52-depleted BRCA1 mutant breast cancer cells. *Breast Cancer Res.* 19: 122.
- Wang, H., et al. 2018. The concerted roles of FANCM and Rad52 in the protection of common fragile sites. *Nat. Commun.* 9: 2791.
- Whelan, D.R., et al. 2018. Spatiotemporal dynamics of homologous recombination repair at single collapsed replication forks. *Nat. Commun.* 9: 3882.
- Teng, Y., et al. 2018. ROS-induced R loops trigger a transcription-coupled but BRCA1/2-independent homologous recombination pathway through CSB. *Nat. Commun.* 9: 4115.
- Clements, K.E., et al. 2018. Loss of E2F7 confers resistance to poly-ADP-ribose polymerase (PARP) inhibitors in BRCA2-deficient cells. *Nucleic Acids Res.* 46: 8898-8907.
- Barroso-González, J., et al. 2019. RAD51AP1 is an essential mediator of alternative lengthening of telomeres. *Mol. Cell* 76: 11-26.
- Graber-Feesl, C.L., et al. 2019. Mitotic DNA synthesis is differentially regulated between cancer and noncancerous cells. *Mol. Cancer Res.* 17: 1687-1698.

RESEARCH USE

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

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