



Anti-Rad51 antibody (rabbit polyclonal, affinity-pure) ChIp grade

70-011 20 µg, 70-012 100 µg

Human Rad51 protein is a functional and structural homolog of *E.coli* RecA protein, which plays a major role in genetic recombination and recombination repair by mediating strand exchange reaction between homologous DNA strands (Ref.1). Rad51 functionally and physically interacts with its paralogs Dmc1, Rad51B, Rad51D, Xrcc2 and Xrcc3, and also with Rad52 in recombination processes. It also interacts with oncogene products and tumor suppressors such as BRACA1, BRACA2, and p53 for the maintenance of genome stability (Ref.1).

Immunogen: Full-size recombinant human Rad51 protein (#10-001)

Purification: Affinity-purified with highly purified recombinant human Rad51 protein

Applications

- 1) Western blotting (1/1,000 ~1/10,000 dilution). Fig. 1
- 2) Immunoprecipitation (Assay dependent). Fig. 2
- 3) Chromatin Immunoprecipitation (ChIp) (assay dependent)
- 4) Immuno-fluorescent staining (1/1,000~1/10,000). Fig. 3 and Ref 2
- 5) Immunohistochemistry. Fig.4
- 6) Dot blotting (1/1,000~1/5,000 dilution)
- 7) ELISA (indirect, 1/2,000~1/5,000 dilution) Not tested for other applications

Reactivity: Reacts with human, rodents, chicken Rad51 proteins. Not tested in other species but it may react with most animals due to sequence conservation.

Form: 1 mg/ml in PBS with 50% glycerol, filter-sterilized. Azide- and carrier-free

Storage: Shipped at 4 °C or -20 °C, and store at -20 °C

Data Link UniProtKB/Swiss-Prot [Q06609](#) (RAD51_HUMAN)

UniProtKB/Swiss-Prot [Q08297](#) (RAD51_MOUSE)

References: Useful information (1). This antibody was used in publication.

1. Friedberg EC *et al* *DNA Repair and Mutagenesis* 2nd ed., ASM Press (2006)
2. Tashiro S *et al*, Rad51 accumulation at sites of DNA damage and in postreplicative chromatin. *J Cell Biol* **150**: 283-291 (2000) PMID: [10908572](#)

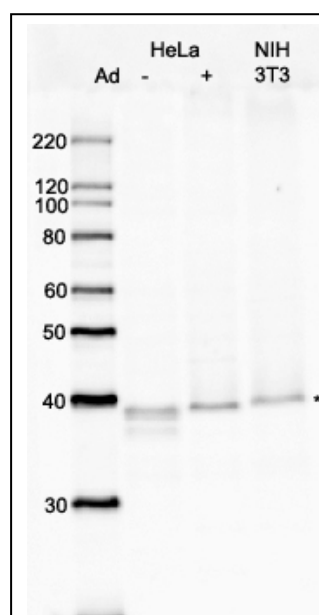


Fig.1 Western blot analysis of Rad51 in the crude extracts of HeLa (human) and NIH3T3 (mouse) cells. Ad -, + indicate HeLa cells grown in the absence and presence of adriamycin, an DNA damaging agent. Anti-Rad51 antibody was used at 1/1,000 dilution.

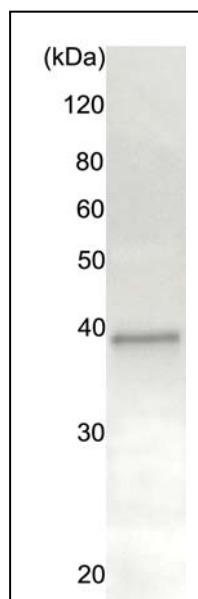


Fig.2. Immunoprecipitation of Rad51 protein from crude extract of HeLa cells by the anti-Rad51 antibody.

Anti-Rad51 antibody (20 μ g) was incubated with 20 μ g of HeLa cell extract, and precipitated with 20 μ g of protein A-beads. The sample was dissociated from the precipitate by heating in SDS-sample buffer and analyzed by western blotting with anti-Rad51 antiserum (chicken, ab63802) at 1/1,000 dilution. As second antibody, anti-chicken IgG antibody (rabbit) was used at 1/10,000 dilution.

Anti-Rad51 antibody
staining

Hoechst staining

Merged Image

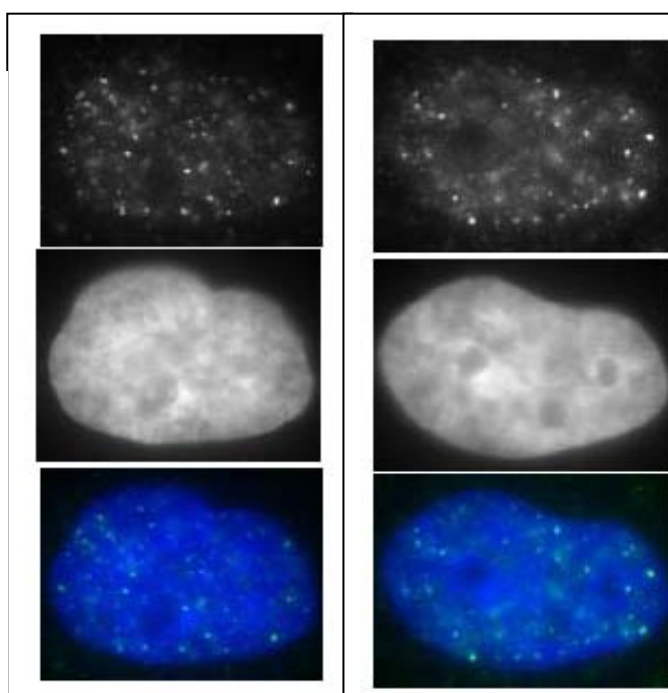


Fig.3. Detection of Rad51 foci formation after X-ray irradiation in human fibroblast cell line, GM0637.

Cells were irradiated by X-rays at 2 Gy, grown for 1 hr, fixed with 4% paraformaldehyde in 1x PBS for 10 min, washed 3 times with PBS for 3 min, permeabilized by treatment with 0.5% Triton for 5 min, washed 3 times with PBS for 3 min, incubated with anti-Rad51 antibody for 30 min at 37 °C, washed 3 times with PBS for 3 min, incubated with secondary antibody for 30 min at 37 °C, washed 3 times with PBS for 3 min, stained with Hoechst for 1 min and mounted.

Anti-Rad51 antibody was used at 1/10,000 dilution (left panels) and 1/1,000 dilution (right panels). As the secondary antibody, anti-rabbit Alexa 488 was used at 1/10,000 dilution. The pictures were by courtesy of Prof. S. Tashiro and Dr. K. Kono at Hiroshima University.

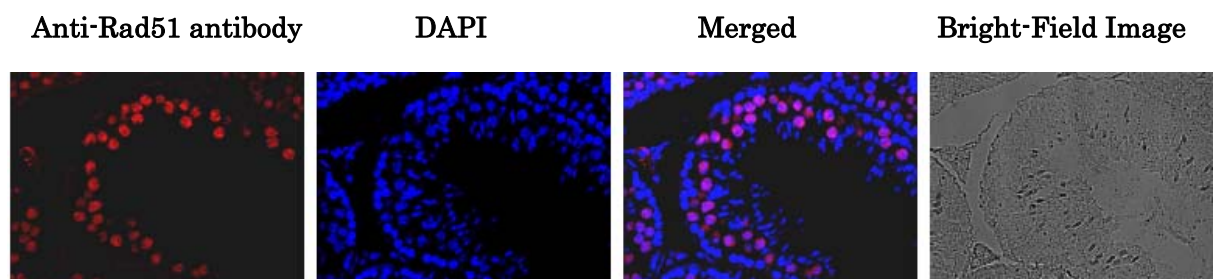


Fig.4. Immunohistological staining of Rad51 protein in mouse testis using anti-Rad51 antibody. A section of formalin fixed and paraffin embedded mouse testis was treated with the anti-Rad51 antibody at 1/100 dilution after deparaffization and antigen retrieval. The 2nd antibody, anti-rabbit IgG conjugated with Alexa Fluor 647 (Abcam) was used at 1/1,000 dilution. DNA was stained with DAPI and the merged image was shown (Merged). The bright-field image of the same region was shown on the right.

Related Products: [10-001](#) Rad51 protein (human) [10-003](#) Rad52 protein (human)
[70-001](#) anti-Rad51 (hu,ms,rat, etc) antibody, rabbit serum [70-003](#) anti-Rad51 (hu,ms,rat,etc) antibody, chicken serum [70-005](#) anti-Rad51 (hu,ms,rat,etc)) antibody, IgY

