

Product datasheet

Anti-Rad51 antibody ab63801

★★★★★ [9 Abreviews](#) [114 References](#) [5 Images](#)

Overview

Product name	Anti-Rad51 antibody
Description	Rabbit polyclonal to Rad51
Host species	Rabbit
Tested applications	Suitable for: WB, ICC/IF
Species reactivity	Reacts with: Human, Xenopus laevis
Immunogen	Purified recombinant full length protein (Human)
Positive control	WB: Crude extract of Xenopus; HeLa cell extract. ICC: U2OS cells.
General notes	<p>Please click here for Instructions For Use/Protocol.</p> <p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As</p>

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Store at -20°C or -80°C. Avoid freeze / thaw cycle.
Storage buffer	pH: 6.5 Preservative: 0.09% Sodium azide
Purity	Whole antiserum
Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our [Abpromise guarantee](#) covers the use of ab63801 in the following tested applications.

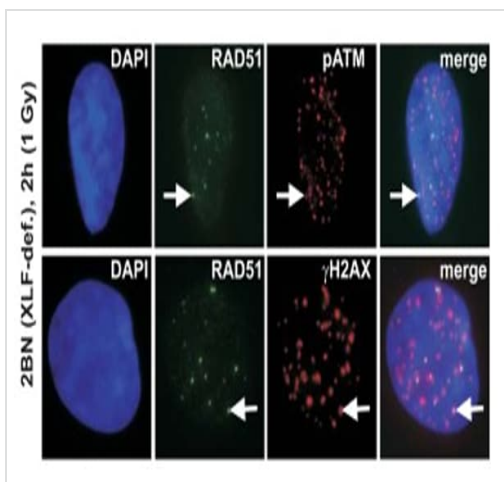
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB	★★★★★ (2)	1/2000 - 1/10000. Detects a band of approximately 37 kDa (predicted molecular weight: 37 kDa).
ICC/IF	★★★★★ (5)	1/100.

Target

Function	Plays an important role in homologous strand exchange, a key step in DNA repair through homologous recombination. Binds to single and double-stranded DNA and exhibits DNA-dependent ATPase activity. Catalyzes the recognition of homology and strand exchange between homologous DNA partners to form a joint molecule between a processed DNA break and the repair template. Binds to single-stranded DNA in an ATP-dependent manner to form nucleoprotein filaments which are essential for the homology search and strand exchange (PubMed:26681308). Part of a PALB2-scaffolded HR complex containing BRCA2 and RAD51C and which is thought to play a role in DNA repair by HR. Plays a role in regulating mitochondrial DNA copy number under conditions of oxidative stress in the presence of RAD51C and XRCC3.
Tissue specificity	Highly expressed in testis and thymus, followed by small intestine, placenta, colon, pancreas and ovary. Weakly expressed in breast.
Involvement in disease	Breast cancer Mirror movements 2 Defects in RAD51 are found in a patient with microcephaly, mental retardation without bone marrow failure and pediatric cancers.
Sequence similarities	Belongs to the RecA family. RAD51 subfamily. Contains 1 HhH domain.
Domain	The nuclear localization may reside in the C-terminus (between 259 and 339 AA).
Post-translational modifications	Ubiquitinated by the SCF(FBXO18) E3 ubiquitin ligase complex, regulating RAD51 subcellular location and preventing its association with DNA. Phosphorylated. Phosphorylation of Thr-309 by CHEK1 may enhance association with chromatin at sites of DNA damage and promote DNA repair by homologous recombination. Phosphorylation by ABL1 inhibits function.
Cellular localization	Nucleus. Cytoplasm. Cytoplasm, perinuclear region. Mitochondrion matrix. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Colocalizes with RAD51AP1 and RPA2 to multiple nuclear foci upon induction of DNA damage. DNA damage induces an increase in nuclear levels. Together with FIGL1, redistributed in discrete nuclear DNA damage-induced foci after ionizing radiation (IR) or camptothecin (CPT) treatment. Accumulated at sites of DNA damage in a SPIDR-dependent manner.

Images

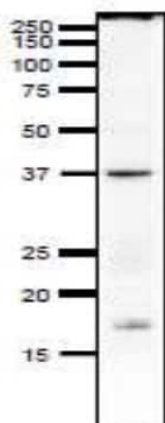


Immunocytochemistry/ Immunofluorescence - Anti-Rad51 antibody (ab63801)

Image from PLoS Genet. 2013 Aug; 9(8): e1003667. Fig 1B, doi: 10.1371/journal.pgen.1003667 Reproduced under the Creative Commons license <http://creativecommons.org/licenses/by/4.0/>

2BN hTert (XLF-deficient) human fibroblasts were fixed for 30 min with methanol at -20°C , dipped for 1 min in ice cold acetone for permeabilization and washed three times for 10 min with PBS/1% FCS. Non-specific antigens were blocked for 30 min in 5% BSA in PBS/1% FCS. Samples were incubated with ab63801 ($1 \mu\text{g}/15000$) in PBS/1% FCS over night at 4°C , washed three times in PBS/1% FCS and incubated for 1 h at room temperature with AlexaFluor 488 conjugated secondary antibodies ($1 : 500$). After three times of washing in PBS, cells were DAPI stained.

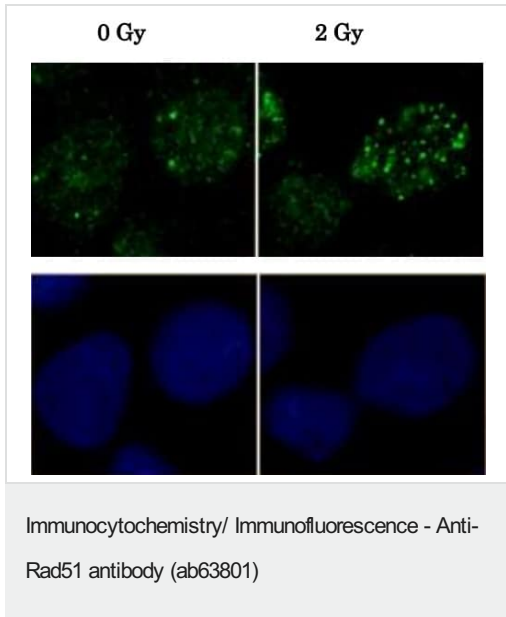
Image shows 2BN hTert (XLF-deficient) human fibroblasts analyzed 2 h post IR with 1 Gy.



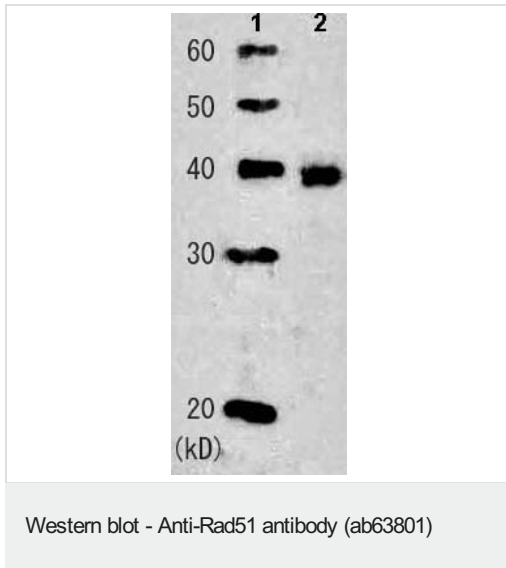
Anti-Rad51 antibody (ab63801) at 1/1000 dilution + Crude extract of Xenopus

Predicted band size: 37 kDa

Western blot - Anti-Rad51 antibody (ab63801)



Immunocytochemistry/ Immunofluorescence analysis of human osteosarcoma U2OS cells X-ray irradiation before and 2h after, immunostained with Anti-Rad51 antibody (ab63801) at 1/6,000 dilution. The lower panels were the same cells with Hoechst.



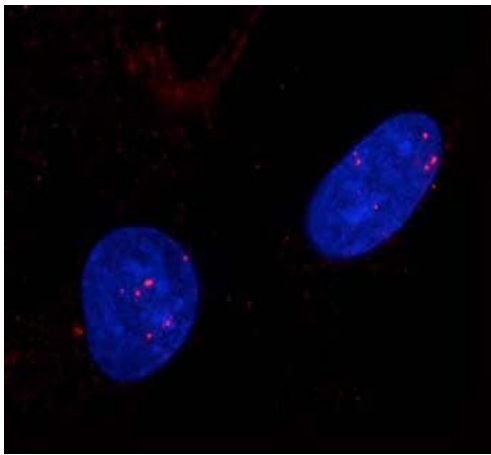
All lanes : Anti-Rad51 antibody (ab63801) at 1/2000 dilution

Lane 1 : Molecular weight markers

Lane 2 : HeLa cell extract

Predicted band size: 37 kDa

Observed band size: 37 kDa



Immunocytochemistry/ Immunofluorescence - Anti-Rad51 antibody (ab63801)

Immunofluorescent detection of Rad51 foci formation induced by DNA damage. Normal human diploid cells were irradiated by X-ray (0.5 Gy) and after incubation of 6 hr, the cells were fixed and immuno-stained by using ab63801 (x100 dilution) as the primary antibody and Alexa594 labeled anti-rabbit antibody as the secondary antibody.

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