


## Product datasheet

### Anti-Rad51 antibody [14B4] ab213

Recombinant

★★★★★ **9 Abreviews** **83 References** [8 Images](#)

#### Overview

<b>Product name</b>	Anti-Rad51 antibody [14B4]
<b>Description</b>	Mouse monoclonal [14B4] to Rad51
<b>Host species</b>	Mouse
<b>Tested applications</b>	<b>Suitable for:</b> IHC-P, WB, ICC/IF
<b>Species reactivity</b>	<b>Reacts with:</b> Human <b>Predicted to work with:</b> Mouse, Rat 
<b>Immunogen</b>	Recombinant full length protein corresponding to Human Rad51 aa 1-338. Database link: <a href="#">Q06609</a>
<b>Positive control</b>	WB: RAD51 shRNA transfected (+) 293T whole cell extracts, Jurkat, Raji and NCI-H929 whole cell lysate. IHC-P: BT483 xenograft tissue, human colon esophagus tissue.
<b>General notes</b>	<p>This product was changed from ascites to tissue culture supernatant on 17<sup>th</sup> September 2018. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.</p> <p>The production method has changed from hybridoma to recombinant on 22nd March 2024</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&amp;As</p>

#### Properties

<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.
<b>Storage buffer</b>	pH: 7.40 Constituent: 100% PBS

<b>Carrier free</b>	Yes
<b>Purity</b>	Immunogen affinity purified
<b>Clonality</b>	Monoclonal
<b>Clone number</b>	14B4
<b>Myeloma</b>	NS1
<b>Isotype</b>	IgG2a
<b>Light chain type</b>	kappa

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab213 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
IHC-P	★★★★☆ (1)	1/100 - 1/1000.
WB	★★★★★ (5)	1/500 - 1/3000. Predicted molecular weight: 37 kDa. Please see WB protocol in image legend.
ICC/IF	★★★★☆ (2)	1/100 - 1/1000.

## Target

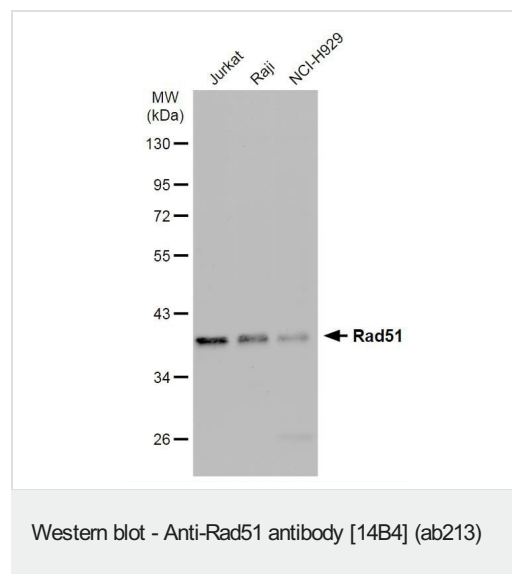
<b>Function</b>	Plays an important role in homologous strand exchange, a key step in DNA repair through homologous recombination. Binds to single and double-stranded DNA and exhibits DNA-dependent ATPase activity. Catalyzes the recognition of homology and strand exchange between homologous DNA partners 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.
<b>Tissue specificity</b>	Highly expressed in testis and thymus, followed by small intestine, placenta, colon, pancreas and ovary. Weakly expressed in breast.
<b>Involvement in disease</b>	Breast cancer Mirror movements 2 Defects in RAD51 are found in a patient with microcephaly, mental retardation without bone marrow failure and pediatric cancers.
<b>Sequence similarities</b>	Belongs to the RecA family. RAD51 subfamily. Contains 1 HhH domain.
<b>Domain</b>	The nuclear localization may reside in the C-terminus (between 259 and 339 AA).
<b>Post-translational modifications</b>	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



**All lanes :** Anti-Rad51 antibody [14B4] (ab213) at 1/500 dilution

**Lane 1 :** Jurkat whole cell lysate

**Lane 2 :** Raji whole cell lysate

**Lane 3 :** NCI-H929 whole cell lysate

Lysates/proteins at 30 µg per lane.

### Secondary

**All lanes :** HRP-conjugated anti-mouse IgG antibody at 1/10000 dilution

Developed using the ECL technique.

**Predicted band size:** 37 kDa

10% SDS-PAGE

Running condition: 80V, 15min; 140V, 40 min

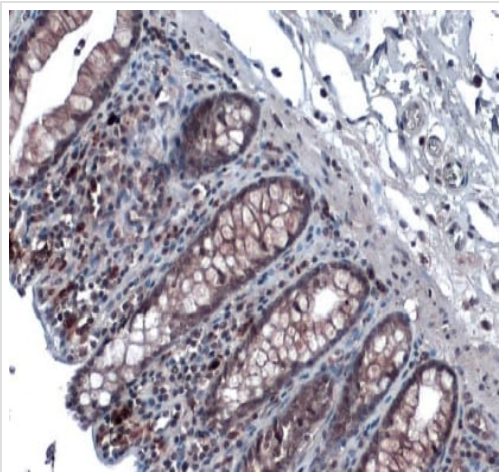
Transfer condition: Semi-dry, 18 V, 60 min (Nitrocellulose membrane)

Blocking condition: 5% non-fat milk in TBST, RT, 60 min.

Primary antibody incubation: 4°C overnight.

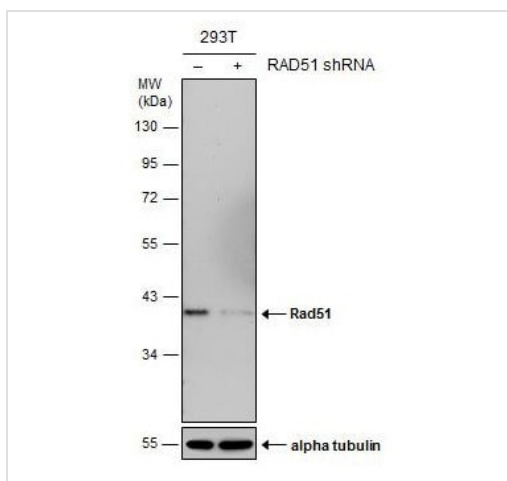
Washing condition: 5 ml TBST, 4 x 5 min.

Chemiluminescent HRP Substrate.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Rad51 antibody [14B4] (ab213)

Immunohistochemical analysis of paraffin-embedded human colon tissue labeling Rad51 with ab213 at 1/100 dilution at 4°C overnight. Antigen Retrieval: Citrate buffer, pH 6.0, 15 min (Cuisinart Electric Pressure Cooker #EPC-1200, choose "high pressure"). Endogenous peroxidase blocking: 3% H<sub>2</sub>O<sub>2</sub>, RT, 30minutes. Blocking: 1.5% goat serum (dilute goat serum by 1xPBS), RT, 30 min. Secondary antibody: ABC HRP Kit (Mouse IgG), 1:200, RT, 30min. Washing: PBS, 2 x 5 mins. Chromogen system: DAB.



Western blot - Anti-Rad51 antibody [14B4] (ab213)

**All lanes :** Anti-Rad51 antibody [14B4] (ab213) at 1/500 dilution

**Lane 1 :** Non-transfected 293T (-) whole cell extracts

**Lane 2 :** RAD51 shRNA transfected (+) 293T whole cell extracts

Lysates/proteins at 30 µg per lane.

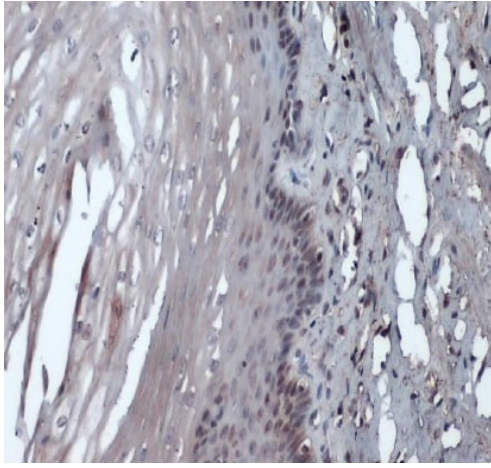
### Secondary

**All lanes :** HRP-conjugated anti-mouse IgG antibody

Developed using the ECL technique.

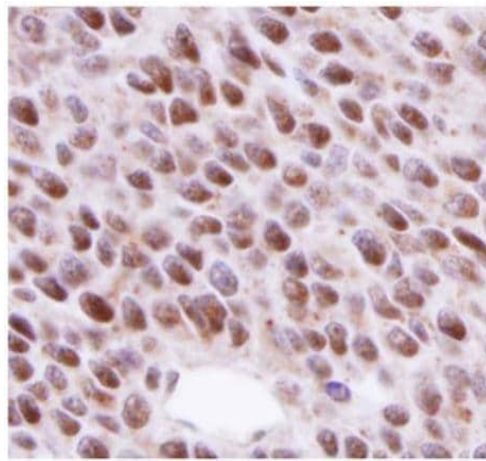
**Predicted band size:** 37 kDa

10% SDS-PAGE



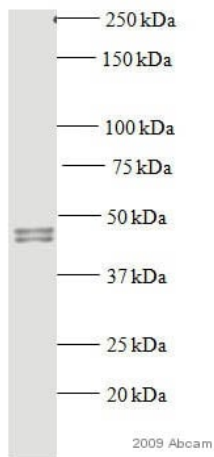
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Rad51 antibody [14B4] (ab213)

Immunohistochemical analysis of paraffin-embedded human esophagus tissue labeling Rad51 with ab213 at 1/100 dilution at 4°C overnight. Antigen Retrieval: Citrate buffer, pH 6.0, 15 min (Cuisinart Electric Pressure Cooker #EPC-1200, choose "high pressure"). Endogenous peroxidase blocking: 3% H<sub>2</sub>O<sub>2</sub>, RT, 30minutes. Blocking: 1.5% goat serum (dilute goat serum by 1xPBS), RT, 30 min. Secondary antibody: ABC HRP Kit (Mouse IgG), 1:200, RT, 30min. Washing: PBS, 2 x 5 mins. Chromogen system: DAB.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Rad51 antibody [14B4] (ab213)

Immunohistochemical analysis of paraffin-embedded BT483 xenograft tissue labeling RAD51 with ab213 at 1/200 dilution. Nuclear staining is observed. Antigen Retrieval: EDTA based, pH 8.0 buffer, 15min.



Western blot - Anti-Rad51 antibody [14B4] (ab213)

Image courtesy of an anonymous Abreview.

Anti-Rad51 antibody [14B4] (ab213) at 1/500 dilution + lysate prepared from murine NIH3T3 cells at 20 µg

### Secondary

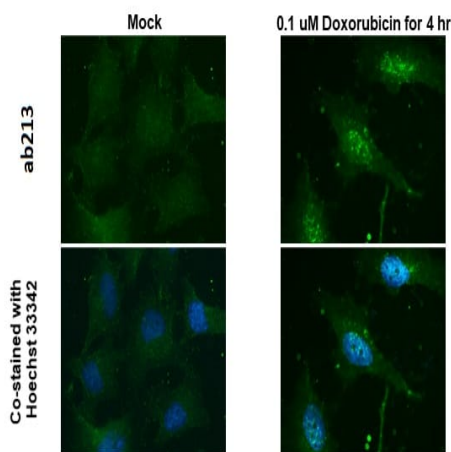
HRP conjugated anti-mouse IgG at 1/5000 dilution

Developed using the ECL technique.

**Predicted band size:** 37 kDa

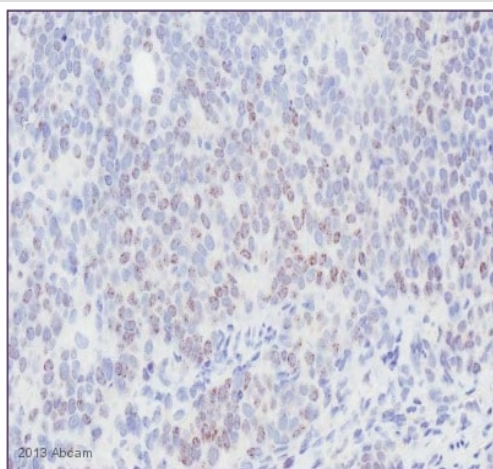
**Observed band size:** 42,45 kDa

**Exposure time:** 5 minutes



Immunocytochemistry/ Immunofluorescence - Anti-Rad51 antibody [14B4] (ab213)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed Mock and treated HeLa cells labelling Rad51 with ab213 at 1/500 dilution (Green). Blue: Fluoroshield with DAPI



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Rad51 antibody [14B4] (ab213)

This image is courtesy of an anonymous Abreview

ab213 staining Rad51 in Human Lovo xenograft tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 20% serum for 20 minutes at room temperature; antigen retrieval was by heat mediation. Samples were incubated with primary antibody (1/100 in TBST) for 1 hour. An undiluted HRP-conjugated Donkey anti-mouse IgG polyclonal was used as the secondary antibody.

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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