

**Anti-Rad51 Picoband Antibody**  
Catalog # ABO12014**Specification****Anti-Rad51 Picoband Antibody - Product Information**

Application	WB, IHC
Primary Accession	<a href="#">Q06609</a>
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

**Description**

Rabbit IgG polyclonal antibody for DNA repair protein RAD51 homolog 1(RAD51) detection. Tested with WB, IHC-P in Human;Mouse;Rat.

**Reconstitution**

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

**Anti-Rad51 Picoband Antibody - Additional Information**

**Gene ID** 5888

**Other Names**

DNA repair protein RAD51 homolog 1, HsRAD51, hRAD51, RAD51 homolog A, RAD51, RAD51A, RECA

**Calculated MW**

36966 MW KDa

**Application Details**

Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Rat, By Heat<br>Western blot, 0.1-0.5 µg/ml, Human, Mouse, Rat<br>

**Subcellular 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 FIGNL1, 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.

**Tissue Specificity**

Highly expressed in testis and thymus, followed by small intestine, placenta, colon, pancreas and ovary. Weakly expressed in breast.

**Protein Name**

DNA repair protein RAD51 homolog 1

**Contents**

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg Na<sub>3</sub>N.

### Immunogen

E.coli-derived human Rad51 recombinant protein (Position: M1-E258). Human Rad51 shares 98% amino acid (aa) sequence identity with mouse Rad51.

### Purification

Immunogen affinity purified.

### Cross Reactivity

No cross reactivity with other proteins

### Storage

**At -20°C for one year. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for a longer time. Avoid repeated freezing and thawing.**

### Sequence Similarities

Belongs to the RecA family. RAD51 subfamily.

## Anti-Rad51 Picoband Antibody - Protein Information

Name RAD51 ([HGNC:9817](#))

Synonyms RAD51A, RECA

### Function

Plays an important role in homologous strand exchange, a key step in DNA repair through homologous recombination (HR) (PubMed: [12205100](http://www.uniprot.org/citations/12205100), PubMed: [18417535](http://www.uniprot.org/citations/18417535), PubMed: [20231364](http://www.uniprot.org/citations/20231364), PubMed: [20348101](http://www.uniprot.org/citations/20348101), PubMed: [22325354](http://www.uniprot.org/citations/22325354), PubMed: [23509288](http://www.uniprot.org/citations/23509288), PubMed: [23754376](http://www.uniprot.org/citations/23754376), PubMed: [26681308](http://www.uniprot.org/citations/26681308), PubMed: [28575658](http://www.uniprot.org/citations/28575658), PubMed: [32640219](http://www.uniprot.org/citations/32640219)). 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: [12205100](http://www.uniprot.org/citations/12205100), PubMed: [18417535](http://www.uniprot.org/citations/18417535), PubMed: [20231364](http://www.uniprot.org/citations/20231364), PubMed: [20348101](http://www.uniprot.org/citations/20348101), PubMed: [23509288](http://www.uniprot.org/citations/23509288), PubMed: [23754376](http://www.uniprot.org/citations/23754376), PubMed: [26681308](http://www.uniprot.org/citations/26681308), PubMed: [28575658](http://www.uniprot.org/citations/28575658)). 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 (PubMed: [12205100](http://www.uniprot.org/citations/12205100), PubMed: [18417535](http://www.uniprot.org/citations/18417535), PubMed: [20231364](http://www.uniprot.org/citations/20231364), PubMed: [20348101](http://www.uniprot.org/citations/20348101), PubMed: [23509288](http://www.uniprot.org/citations/23509288), PubMed: [12205100](http://www.uniprot.org/citations/12205100), PubMed: [18417535](http://www.uniprot.org/citations/18417535), PubMed: [20231364](http://www.uniprot.org/citations/20231364), PubMed: [20348101](http://www.uniprot.org/citations/20348101), PubMed: [23509288](http://www.uniprot.org/citations/23509288)).

<http://www.uniprot.org/citations/23754376> target="\_blank">23754376</a>, PubMed:<a href="http://www.uniprot.org/citations/26681308" target="\_blank">26681308</a>, PubMed:<a href="http://www.uniprot.org/citations/28575658" target="\_blank">28575658</a>, PubMed:<a href="http://www.uniprot.org/citations/38459011" target="\_blank">38459011</a>). Recruited to resolve stalled replication forks during replication stress (PubMed:<a href="http://www.uniprot.org/citations/27797818" target="\_blank">27797818</a>, PubMed:<a href="http://www.uniprot.org/citations/31844045" target="\_blank">31844045</a>). Part of a PALB2-scaffolded HR complex containing BRCA2 and RAD51C and which is thought to play a role in DNA repair by HR (PubMed:<a href="http://www.uniprot.org/citations/12442171" target="\_blank">12442171</a>, PubMed:<a href="http://www.uniprot.org/citations/24141787" target="\_blank">24141787</a>). Plays a role in regulating mitochondrial DNA copy number under conditions of oxidative stress in the presence of RAD51C and XRCC3 (PubMed:<a href="http://www.uniprot.org/citations/20413593" target="\_blank">20413593</a>). Also involved in interstrand cross-link repair (PubMed:<a href="http://www.uniprot.org/citations/26253028" target="\_blank">26253028</a>).

### Cellular Location

Nucleus. Cytoplasm. Cytoplasm, perinuclear region. Mitochondrion matrix Chromosome. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome Note=Colocalizes with RAD51AP1 and RPA2 to multiple nuclear foci upon induction of DNA damage (PubMed:20154705). DNA damage induces an increase in nuclear levels (PubMed:20154705). Together with FIGNL1, redistributed in discrete nuclear DNA damage-induced foci after ionizing radiation (IR) or camptothecin (CPT) treatment (PubMed:23754376). Accumulated at sites of DNA damage in a SPIDR- dependent manner (PubMed:23509288). Recruited at sites of DNA damage in a MCM9-MCM8-dependent manner (PubMed:23401855). Recruited at sites of DNA damage following interaction with TOPBP1 in S-phase (PubMed:26811421). Colocalizes with ERCC5/XPG to nuclear foci in S phase (PubMed:26833090). Recruited to stalled replication forks during replication stress by the TONSL-MMS22L complex, as well as ATAD5 and WDR48 in an ATR-dependent manner (PubMed:27797818, PubMed:31844045)

### Tissue Location

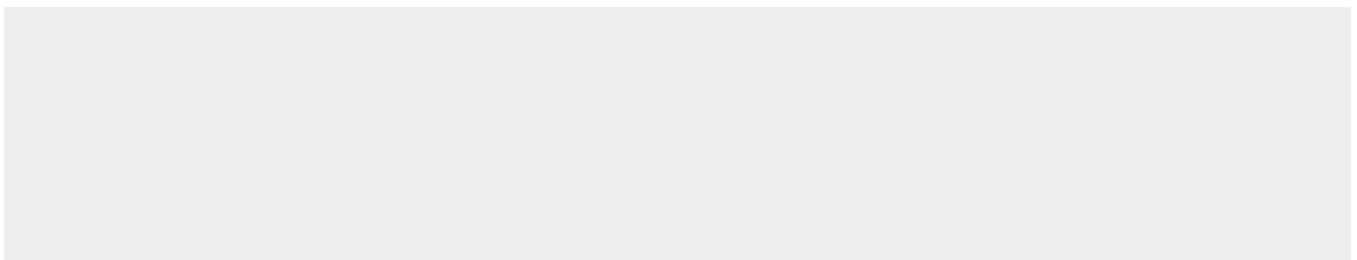
Highly expressed in testis and thymus, followed by small intestine, placenta, colon, pancreas and ovary. Weakly expressed in breast

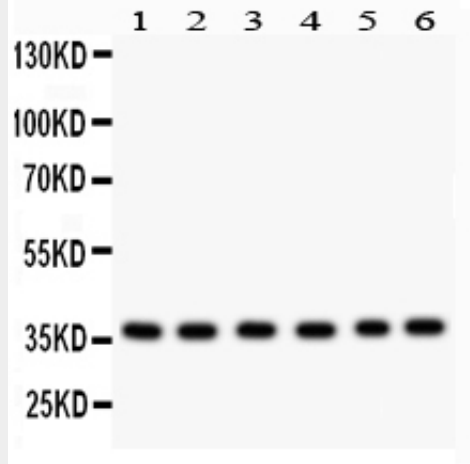
## Anti-Rad51 Picoband Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

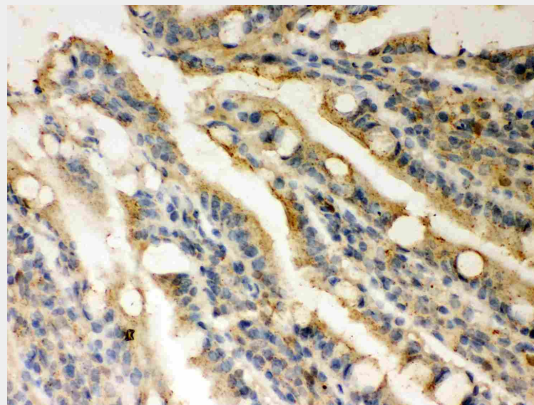
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

## Anti-Rad51 Picoband Antibody - Images

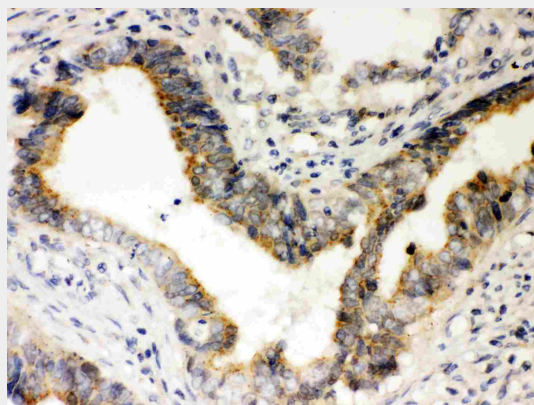




Anti- Rad51 Picoband antibody, ABO12014, Western blotting All lanes: Anti Rad51 (ABO12014) at 0.5ug/ml  
 Lane 1: 22RV1 Whole Cell Lysate at 40ug  
 Lane 2: SW620 Whole Cell Lysate at 40ug  
 Lane 3: PANC Whole Cell Lysate at 40ug  
 Lane 4: U87 Whole Cell Lysate at 40ug  
 Lane 5: CEM Whole Cell Lysate at 40ug  
 Lane 6: MM231 Whole Cell Lysate at 40ug  
 Predicted bind size: 37KD  
 Observed bind size: 37KD



Anti- Rad51 Picoband antibody, ABO12014, IHC(P) IHC(P): Rat Intestine Tissue



Anti- Rad51 Picoband antibody, ABO12014, IHC(P) IHC(P): Human Intestinal Cancer Tissue

### Anti-Rad51 Picoband Antibody - Background

DNA repair protein RAD51 homolog 1, also known as RAD51A, is a human gene. The Rad51 gene, HsRAD51, is a homolog of RecA of Escherichia coli and functions in recombination and DNA repair. BRCA1 and BRCA2 proteins form a complex with Rad51, and these genes are thought to participate in a common DNA damage response pathway associated with the activation of homologous

recombination and double-strand break repair. RAD51 is also found to interact with BRCA1 and BRCA2, which may be important for the cellular response to DNA damage. BRCA2 is shown to regulate both the intracellular localization and DNA-binding ability of this protein. Loss of these controls following BRCA2 inactivation may be a key event leading to genomic instability and tumorigenesis.