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KD-Validated Anti-RAD51 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1092

Specification

KD-Validated Anti-RAD51 Rabbit Monoclonal Antibody - Product Information

Application	**WB, FC, ICC**
Primary Accession	Q06609
Reactivity	**Rat, Human, Mouse**
Clonality	**Monoclonal**
Isotype	**Rabbit IgG**
Calculated MW	**Predicted, 37 kDa , observed, 36 kDa KDa**
Gene Name	**RAD51**
Aliases	**RAD51; RAD51 Recombinase; RAD51A; BRCC5; FANCR; RECA; BRCA1/BRCA2-Containing Complex, Subunit 5; DNA Repair Protein RAD51 Homolog 1; RAD51 Homolog A; HsT16930; HsRad51; HRAD51; RAD51 Homolog (RecA Homolog, E. Coli) (S. Cerevisiae); RAD51 (S. Cerevisiae) Homolog (E Coli RecA Homolog); RAD51 Homolog (S. Cerevisiae); RecA, E. Coli, Homolog Of; Recombination Protein A; RecA-Like Protein; HST16930; HSRAD51; HsRAD51; MRMV2**
Immunogen	**A synthesized peptide derived from human Rad51**

KD-Validated Anti-RAD51 Rabbit Monoclonal Antibody - Additional Information

Gene ID	**5888**

Other Names
DNA repair protein RAD51 homolog 1, HsRAD51, hRAD51, RAD51 homolog A, RAD51 (HGNC:9817), RAD51A, RECA

KD-Validated Anti-RAD51 Rabbit Monoclonal 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, PubMed:18417535, PubMed:20231364, PubMed:<a href="http://www.uniprot.org/citations/20348101"

target="_blank">20348101, PubMed:22325354, PubMed:23509288, PubMed:23754376, PubMed:26681308, PubMed:28575658, PubMed: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, PubMed:18417535, PubMed:20231364, PubMed:20348101, PubMed:23509288, PubMed:23754376, PubMed:26681308, PubMed: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, PubMed:18417535, PubMed:20231364, PubMed:20348101, PubMed:23509288, PubMed:23754376, PubMed:26681308, PubMed:28575658, PubMed:38459011). Recruited to resolve stalled replication forks during replication stress (PubMed:27797818, PubMed:31844045). 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:12442171, PubMed:24141787). Plays a role in regulating mitochondrial DNA copy number under conditions of oxidative stress in the presence of RAD51C and XRCC3 (PubMed:20413593). Also involved in interstrand cross-link repair (PubMed:26253028).

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

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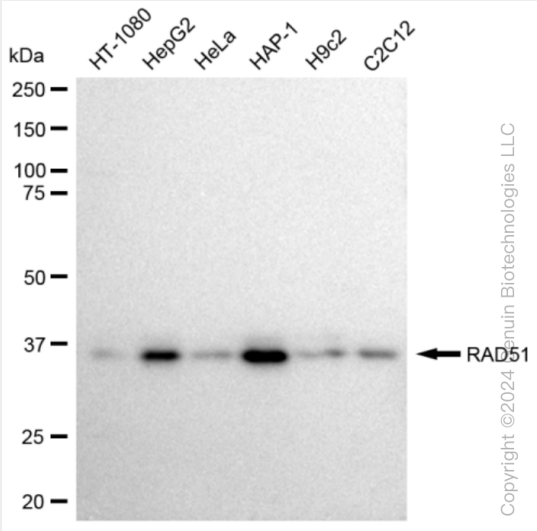
KD-Validated Anti-RAD51 Rabbit Monoclonal Antibody - Protocols

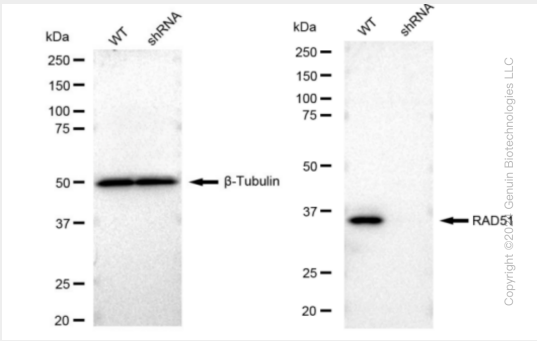
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

KD-Validated Anti-RAD51 Rabbit Monoclonal Antibody - Images



Western blotting analysis using anti-RAD51 antibody (Cat#AGI1092). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-RAD51 antibody (Cat#AGI1092, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Western blotting analysis using anti-RAD51 antibody (Cat#AGI1092). RAD51 expression in wild type (WT) and RAD51 shRNA knockdown (KD) HeLa cells with 30 µg of total cell lysates. β-Tubulin serves as a loading control. The blot was incubated with anti-RAD51 antibody (Cat#AGI1092, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.

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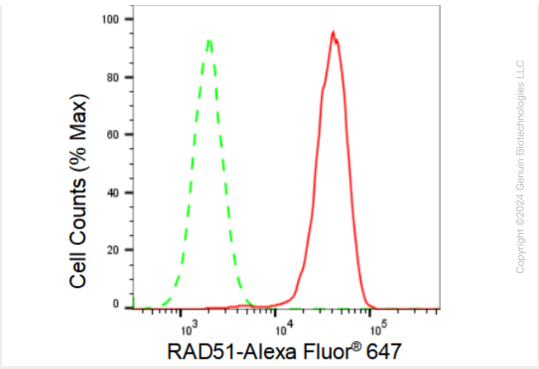
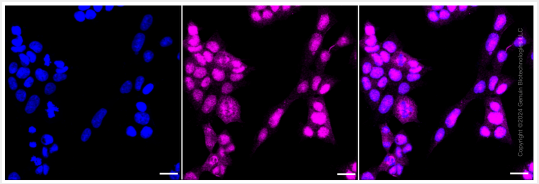


Flow cytometric analysis of RAD51 expression in HAP-1 cells using RAD51 antibody (Cat#AGI1092, 1:2,000). Green, isotype control; red, RAD51.



Immunocytochemical staining of HAP-1 cells with RAD51 antibody (Cat#AGI1092, 1:1,000). Nuclei were stained blue with DAPI; RAD51 was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar: 20 µm.