

#15016 Store at -20°C

Rad54 (D4W3Z) Rabbit mAb**Cell Signaling**
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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: WB, IP	Reactivity: H	Sensitivity: Endogenous	MW (kDa): 84	Source/Isotype: Rabbit IgG	UniProt ID: #Q92698	Entrez-Gene Id: 8438
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Product Usage Information**Application**

Western Blotting

Dilution

1:1000

Immunoprecipitation

1:100

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity / Sensitivity

Rad54 (D4W3Z) Rabbit mAb recognizes endogenous levels of total Rad54 protein. Based on sequence, this antibody is not expected to recognize Rad54B. This antibody also cross-reacts with an unidentified protein of 200 kDa.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly246 of human Rad54 protein.

Background

DNA double-strand breaks (DSBs) are potentially hazardous lesions that can be induced by ionizing radiation (IR), radiomimetic chemicals, or DNA replication inhibitors. Cells sense and repair DSBs via two distinct but partly overlapping signaling pathways, nonhomologous end joining (NHEJ) and homologous recombination (HR). Defects in both pathways have been associated with human disease, including cancer (1). The DNA repair and recombination protein RAD54-like (Rad54, RAD54L) is a Swi2/Snf2 family DNA helicase that is involved in homologous recombination DNA repair. Rad54 is a double-stranded DNA-dependent ATPase that translocates in a processive manner along double-stranded DNA. The Rad54 helicase interacts with the Rad51 recombinase to regulate its DNA binding and strand exchange activities during homologous recombination (2-4). Mutations in the corresponding *RAD54L* gene are associated with multiple forms of human cancer, including non-Hodgkin's lymphoma, breast cancer, and parathyroid adenoma (5-8).

Background References

1. Hartlerode, A.J. and Scully, R. (2009) *Biochem J* 423, 157-68.
2. Sung, P. et al. (2003) *J Biol Chem* 278, 42729-32.
3. Wright, W.D. and Heyer, W.D. (2014) *Mol Cell* 53, 420-32.
4. Ceballos, S.J. and Heyer, W.D. (2011) *Biochim Biophys Acta* 1809, 509-23.
5. Smirnova, M. et al. (2004) *J Biol Chem* 279, 24081-8.
6. Gonzalez, R. et al. (1999) *Br J Cancer* 81, 503-9.
7. Carling, T. et al. (1999) *Int J Cancer* 83, 80-2.
8. Matsuda, M. et al. (1999) *Oncogene* 18, 3427-30.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key**WB:** Western Blotting **IP:** Immunoprecipitation**Cross-Reactivity Key**

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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