

#8875 Store at -20°C

Rad51 (D4B10) Rabbit mAb



Cell Signaling
TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP	H M R Mk	Endogenous	37	Rabbit IgG	#Q06609	5888

Product Usage Information

Application

Western Blotting
Immunoprecipitation

Dilution

1:1000
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

Rad51 (D4B10) Rabbit mAb recognizes endogenous levels of total Rad51 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with recombinant protein specific to full-length human Rad51 protein. This antibody recognizes residues surrounding Leu140 of human Rad51.

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). Research studies have shown that defects in both pathways are associated with human disease, including cancer (reviewed in 1).

DSBs that arise during S or G2 phase are repaired via homologous recombination (HR), using the replicated sister chromatid as a repair template. Rad51 recombinase, a eukaryotic homologue of *E. coli* RecA, polymerizes and forms a filament along single-stranded DNA, mediating HR with the help of auxiliary proteins, including Rad54 and BRCA2 (reviewed in 2,3). BRCA2 binds Rad51 and targets it to single-stranded DNA, allowing it to displace replication protein A (RPA) (4). Five Rad51 paralogs exist in vertebrates (XRCC2, XRCC3, Rad51B, Rad51C, and Rad51D) and they all appear to be required for efficient HR (5).

Researchers have found that mutations in the Rad51 gene may be related to breast cancer risk (6). Some studies have implicated Rad51 as a potential marker for pancreatic cancer (7).

Background References

- Hartlerode, A.J. and Scully, R. (2009) *Biochem J* 423, 157-68.
- Sung, P. et al. (2003) *J Biol Chem* 278, 42729-32.
- Mazin, A.V. et al. (2010) *DNA Repair (Amst)* 9, 286-302.
- Jensen, R.B. et al. (2010) *Nature* 467, 678-83.
- Takata, M. et al. (2001) *Mol Cell Biol* 21, 2858-66.
- Antoniou, A.C. et al. (2007) *Am J Hum Genet* 81, 1186-200.
- Nagathihalli, N.S. and Nagaraju, G. (2011) *Biochim Biophys Acta* 1816, 209-18.

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 BSA, 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

Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

All other trademarks are the property of their respective owners. Visit cellsignal.com/trademarks for more information.

Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.