Revision 4

Store at -20C

#4847

Mre11 (31H4) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IHC-P	H	Endogenous	81	Rabbit IgG	#P49959	4361

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunohistochemistry (Paraffin)	1:500 - 1:2000

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

Mre11 detects endogenous levels of Mre11 homologue A (Mre11A).

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Lys496 of human Mre11A.

Background

Mre11, originally described in genetic screens from the yeast *Saccharomyces cerevisiae* in which mutants were defective in meiotic recombination (1), is a central part of a multisubunit nuclease composed of Mre11, Rad50 and Nbs1 (MRN) (2,3). The MRN complex plays a critical role in sensing, processing and repairing DNA double strand breaks. Defects lead to genomic instability, telomere shortening, aberrant meiosis and hypersensitivity to DNA damage (4). Hypomorphic mutations of Mre11 are found in ataxia-telangiectasia-like disease (ATLD), with phenotypes similar to mutations in ATM that cause ataxia-telangiectasia (A-T), including a predisposition to malignancy in humans (5). Cellular consequences of ATLD include chromosomal instability and defects in the intra-S phase and G2/M checkpoints in response to DNA damage. The MRN complex may directly activate the ATM checkpoint kinase at DNA breaks (6).

Background References

1. Ajimura, M. et al. (1993) *Genetics* 133, 51-66.
2. D'Amours, D. and Jackson, S.P. (2002) *Nat Rev Mol Cell Biol* 3, 317-27.
3. van den Bosch, M. et al. (2003) *EMBO Rep* 4, 844-9.
4. Theunissen, J.W. et al. (2003) *Mol Cell* 12, 1511-23.
5. Stewart, G.S. et al. (1999) *Cell* 99, 577-87.
6. Carson, C.T. et al. (2003) *EMBO J* 22, 6610-20.

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

W: Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin)

Cross-Reactivity Key

H: Human

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Limited Uses

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