

#4859 Store at **-20°C**

Phospho-Mre11 (Ser676) Antibody

100 µl
 (10 western blots)



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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

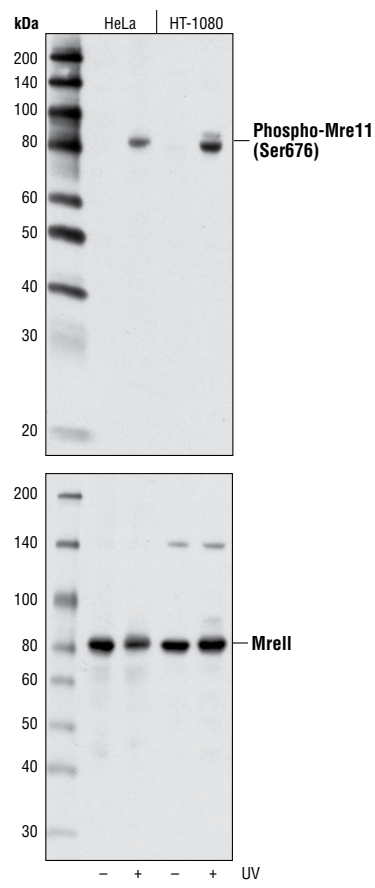
Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, (Mk)	81 kDa	Rabbit**

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).

Phospho-Mre11 (Ser676) Antibody is directed to a site that was identified at Cell Signaling Technology (CST) using PhosphoScan®, CST's LC-MS/MS platform for modification site discovery. Phosphorylation at Ser676 was discovered using an ATM/ATR substrate antibody and was shown to be induced by UV treatment (7). Please visit Phospho-SitePlus®, CST's modification site knowledgebase, at www.phosphosite.org for more information.

Specificity/Sensitivity: Phospho-Mre11 (Ser676) Antibody detects endogenous levels of Mre11 only when phosphorylated at Ser676.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser676 of human Mre11. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from HeLa and HT-1080 cells, untreated or treated with UV, using Phospho-Mre11 (Ser676) Antibody (upper) or total Mre11 Antibody #4895 (lower).

Entrez-Gene ID #4361
Swiss-Prot Acc. #P49959

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

***Species cross-reactivity is determined by western blot.**
****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:
 Western blotting 1:1000

For application specific protocols please see the web page for this product at www.cellsignal.com.
Please visit www.cellsignal.com for a complete listing of recommended companion products.

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, 317–327.
- (3) van den Bosch, M. et al. (2003) *EMBO Rep.* 4, 844–849.
- (4) Theuissen, J.F. et al. (2003) *Mol. Cell* 12, 1511–1523.
- (5) Stewart, G.S. et al. (1999) *Cell* 99, 577–587.
- (6) Carson, C.T. et al. (2003) *EMBO J.* 22, 6610–6620.
- (7) Stokes, M.P. et al. (2007) *Proc. Natl. Acad. Sci. USA* 104, 19855–19860.

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

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Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide
Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey 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 All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.