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Rabbit Anti-Phospho-Mre11 (Ser676) antibody

SL3293R

Product Name:	Phospho-Mre11 (Ser676)
Chinese Name:	磷酸化DNA损伤关键蛋白Mre11抗体
Alias:	Mre 11; MRE 11a; MRE 11b; MRE11 homolog 1; MRE11 meiotic recombination 11 homolog A; MRE11a; MRE11b; AT like disease; Ataxia telangiectasia disorder like; Ataxia-telangiectasia disorder-like; ATLD; DNA recombination and repair protein; Double strand break repair protein MRE11A; Double-strand break repair protein MRE11A; endo/exonuclease Mre11. HNGS1; meiotic recombination (S. cerevisiae) 11 homolog A; meiotic recombination 11 homolog A (S. cerevisiae); meiotic recombination 11 homolog A; MmMRE11A.MRE11_RAT
Organism Species:	Rabbit
Clonality:	Polyclonal
React Species:	Human,Mouse,Rat,Dog,
Applications:	ELISA=1:500-1000IHC-P=1:400-800IHC-F=1:400-800IF=1:100-500（Paraffin sections need antigen repair） not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Molecular weight:	80kDa
Cellular localization:	The nucleus
Form:	Lyophilized or Liquid
Concentration:	1mg/ml
immunogen:	KLH conjugated Synthesised phosphopeptide derived from rat Mre11 around the phosphorylation site of Ser676:SQ(p-S)Q
Lsotype:	IgG
Purification:	affinity purified by Protein A
Storage Buffer:	0.01M TBS(pH7.4) with 1% BSA, 0.03% Proclin300 and 50% Glycerol.
Storage:	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20°C. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

PubMed:	PubMed
Product Detail:	This gene encodes a nuclear protein involved in homologous recombination, telomere length maintenance, and DNA double-strand break repair. By itself, the protein has 3' to 5' exonuclease activity and endonuclease activity. The protein forms a complex with the RAD50 homolog; this complex is required for nonhomologous joining of DNA ends and possesses increased single-stranded DNA endonuclease and 3' to 5' exonuclease activities. In conjunction with a DNA ligase, this protein promotes the joining of noncomplementary ends in vitro using short homologies near the ends of the DNA fragments. This gene has a pseudogene on chromosome 3. Alternative splicing of this gene results in two transcript variants encoding different isoforms. [provided by RefSeq, Jul 2008] **Function:** Component of the MRN complex, which plays a central role in double-strand break (DSB) repair, DNA recombination, maintenance of telomere integrity and meiosis. The complex possesses single-strand endonuclease activity and double-strand-specific 3'-5' exonuclease activity, which are provided by MRE11A. RAD50 may be required to bind DNA ends and hold them in close proximity. This could facilitate searches for short or long regions of sequence homology in the recombining DNA templates, and may also stimulate the activity of DNA ligases and/or restrict the nuclease activity of MRE11A to prevent nucleolytic degradation past a given point. The complex may also be required for DNA damage signaling via activation of the ATM kinase. In telomeres the MRN complex may modulate t-loop formation **Subunit:** Component of the MRN complex composed of two heterodimers RAD50/MRE11A associated with a single NBN. Component of the BASC complex, at least composed of BRCA1, MSH2, MSH6, MLH1, ATM, BLM, RAD50, MRE11A and NBN. Interacts with DCLRE1C/Artemis and DCLRE1B/Apollo. **Subcellular Location:** Nucleus. Note=Localizes to discrete nuclear foci after treatment with genotoxic agents **Post-translational modifications:** Phosphorylated upon DNA damage, probably by ATM or ATR. **DISEASE:** Defects in MRE11A are a cause of ataxia telangiectasia-like disorder (ATLD) [MIM:604391]. ATLD is a disease with the same clinical feature than ataxia-telangiectasia but with a somewhat milder clinical course. **Similarity:** Belongs to the MRE11/RAD32 family. **SWISS:** P49959

Gene ID:
64046

Database links:

Entrez Gene: 4361 Human

Entrez Gene: 17535 Mouse

Entrez Gene: 64046 Rat

Omim: 600814 Human

SwissProt: P49959 Human

SwissProt: Q61216 Mouse

SwissProt: Q9JIM0 Rat

Unigene: 192649 Human

Unigene: 149071 Mouse

Unigene: 209040 Rat

Important Note:
This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

在细胞中，有多种蛋白参与DNA损伤应答，DNA损伤是可引起癌变的细胞变化，这些蛋白在细胞发生损伤后会启动细胞修复过程，帮助受损的细胞恢复正常。
正常情况下，细胞会经历生长、分化和自然死亡的历程。当细胞受到损伤时，如;辐射损伤或是毒物刺激，一种多蛋白复合物参与的步骤将被启动，进行细胞修复工作并激活其他的生物过程。在这过程中，存在一种MRN复合物，由Mre11，Rad50和NBS1蛋白组成，MRN探测DNA损伤（DNA双链是否断裂）的情况。复合物在探测到DNA损伤信号后将把这个信息传递给一种酶，ATM（ataxia-telangiectasia mutated）检测激酶（checkpoint kinase）。ATM激酶能对DNA双链断裂产生应答反应，它具有降低细胞增殖的能力，给细胞修复腾出时间。因此ATM一旦发生变异，功能失效可能导致免疫缺陷甚至是癌变。
研究者认为，Mre11不仅是DNA损伤的感受器，更是修复DNA的启动因子，还能修饰受损的DNA分子。