

Anti-Mre11 MRE11A Rabbit Monoclonal Antibody
Catalog # ABO13776**Specification****Anti-Mre11 MRE11A Rabbit Monoclonal Antibody - Product Information**

Application	WB, IHC
Primary Accession	P49959
Host	Rabbit
Isotype	Rabbit IgG
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Format	Liquid

Description

Anti-Mre11 MRE11A Rabbit Monoclonal Antibody . Tested in WB, IHC applications. This antibody reacts with Human, Mouse, Rat.

Anti-Mre11 MRE11A Rabbit Monoclonal Antibody - Additional Information

Gene ID 4361

Other Names

Double-strand break repair protein MRE11, 3.1.-., Meiotic recombination 11 homolog 1, MRE11 homolog 1, Meiotic recombination 11 homolog A, MRE11 homolog A, MRE11
{ECO:0000303|PubMed:8530104, ECO:0000312|HGNC:HGNC:7230}

Calculated MW

80593 MW KDa

Application Details

WB 1:500-1:1000
IHC 1:50-1:200

Subcellular Localization

Nucleus. Chromosome, telomere. Localizes to discrete nuclear foci after treatment with genotoxic agents..

Contents

Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.

Immunogen

A synthesized peptide derived from human Mre11

Purification

Affinity-chromatography

Storage

Store at -20°C for one year. For short term storage and frequent use, store at 4°C for up to one month. Avoid repeated freeze-thaw cycles.

Anti-Mre11 MRE11A Rabbit Monoclonal Antibody - Protein Information

Name MRE11 {ECO:0000303|PubMed:8530104, ECO:0000312|HGNC:HGNC:7230}

Function

Core component of the MRN complex, which plays a central role in double-strand break (DSB) repair, DNA recombination, maintenance of telomere integrity and meiosis (PubMed: 11741547, PubMed: 14657032, PubMed: 22078559, PubMed: 23080121, PubMed: 24316220, PubMed: 26240375, PubMed: 27889449, PubMed: 28867292, PubMed: 29670289, PubMed: 30464262, PubMed: 30612738, PubMed: 31353207, PubMed: 37696958, PubMed: 38128537, PubMed: 9590181, PubMed: 9651580, PubMed: 9705271). The MRN complex is involved in the repair of DNA double-strand breaks (DSBs) via homologous recombination (HR), an error-free mechanism which primarily occurs during S and G2 phases (PubMed: 24316220, PubMed: 28867292, PubMed: 31353207, PubMed: 38128537). The complex (1) mediates the end resection of damaged DNA, which generates proper single-stranded DNA, a key initial steps in HR, and is (2) required for the recruitment of other repair factors and efficient activation of ATM and ATR upon DNA damage (PubMed: 24316220, PubMed: 27889449, PubMed: 28867292, PubMed: 36050397, PubMed: 38128537). Within the MRN complex, MRE11 possesses both single-strand endonuclease activity and double-strand-specific 3'-5' exonuclease activity (PubMed: 11741547, PubMed: 22078559, PubMed: 24316220, PubMed: 26240375, PubMed: 27889449, PubMed: 29670289, PubMed: 31353207, PubMed: 36563124, PubMed: 9590181, PubMed: 9651580, PubMed: 9705271). After DSBs, MRE11 is loaded onto DSBs sites and cleaves DNA by cooperating with RBBP8/CtIP to initiate end resection (PubMed: 27814491, PubMed: 27889449, PubMed: 30787182). MRE11 first

endonucleolytically cleaves the 5' strand at DNA DSB ends to prevent non-homologous end joining (NHEJ) and licence HR (PubMed:24316220). It then generates a single-stranded DNA gap via 3' to 5' exonucleolytic degradation to create entry sites for EXO1- and DNA2-mediated 5' to 3' long-range resection, which is required for single-strand invasion and recombination (PubMed:24316220, PubMed:28867292). RBBP8/CtIP specifically promotes the endonuclease activity of MRE11 to clear protein-DNA adducts and generate clean double-strand break ends (PubMed:27814491, PubMed:27889449, PubMed:30787182). The MRN complex is also required for DNA damage signaling via activation of the ATM and ATR kinases: the nuclease activity of MRE11 is not required to activate ATM and ATR (PubMed:14657032, PubMed:15064416, PubMed:15790808, PubMed:16622404). The MRN complex is also required for the processing of R-loops (PubMed:31537797). The MRN complex is involved in the activation of the cGAS-STING pathway induced by DNA damage during tumorigenesis: the MRN complex acts by displacing CGAS from nucleosome sequestration, thereby activating it (By similarity). In telomeres the MRN complex may modulate t-loop formation (PubMed:10888888).

Cellular Location

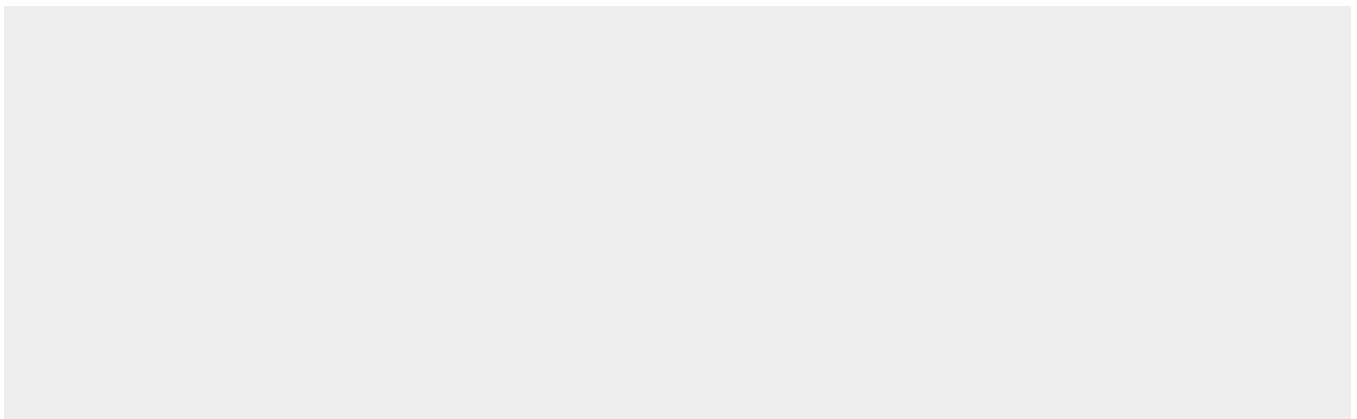
Nucleus. Chromosome. Chromosome, telomere Note=Localizes to DNA double-strand breaks (DSBs)

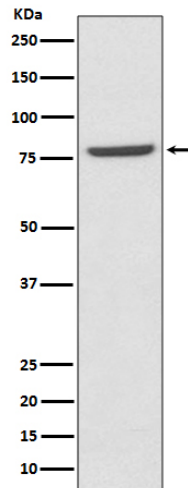
Anti-Mre11 MRE11A Rabbit Monoclonal Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Anti-Mre11 MRE11A Rabbit Monoclonal Antibody - Images





Western blot analysis of Mre11 expression in K562 cell lysate.