

## MDC1 (Phospho Ser513) Rabbit pAb

CatalogNo: YP1100

### Key Features

#### Host Species

- Rabbit

#### Reactivity

- Human, Mouse, Rat

#### Applications

- IHC, IF, ELISA

#### MW

- 227kD (Calculated)

#### Isotype

- IgG

### Storage

**Storage\*** -15°C to -25°C/1 year (Do not lower than -25°C)

**Formulation** Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.

### Recommended Dilution Ratios

**IHC 1:100-1:300**

**ELISA 1:5000**

**IF 1:50-200**

### Basic Information

**Clonality** Polyclonal

### Immunogen Information

**Immunogen** The antiserum was produced against synthesized peptide derived from human MDC1 around the phosphorylation site of Ser513. AA range:479-528

**Specificity** Phospho-MDC1 (S513) Polyclonal Antibody detects endogenous levels of MDC1 protein only when phosphorylated at S513. The name of modified sites may be influenced by many factors, such as species (the modified site was not originally found in human samples) and the change of protein sequence (the previous protein sequence is incomplete, and the protein sequence may be prolonged with the development of protein sequencing technology). When naming, we will use the "numbers" in historical reference to keep the sites consistent with the reports. The antibody binds to the following modification sequence (lowercase letters are modification sites): LERSQ

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## | Target Information

**Gene name** MDC1

**Protein Name** Mediator of DNA damage checkpoint protein 1

Organism	Gene ID	UniProt ID
Human	<a href="#">9656</a> ;	<a href="#">Q14676</a> ;
Mouse		<a href="#">Q5PSV9</a> ;

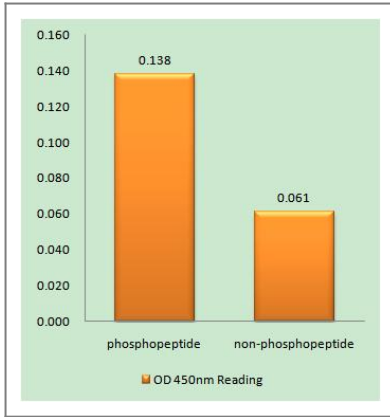
**Cellular Localization** Nucleus . Chromosome . Associated with chromatin. Relocalizes to discrete nuclear foci following DNA damage , this requires 'Ser-139' phosphorylation of H2AX. Colocalizes with APTX at sites of DNA double-strand breaks.

**Tissue specificity** Highly expressed in testis.

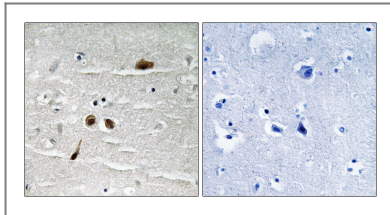
**Function** Domain:Tandemly repeated BRCT domains are characteristic of proteins involved in DNA damage signaling. In MDC1 , these repeats are required for localization to chromatin which flanks sites of DNA damage marked by 'Ser-139' phosphorylation of H2AFX. ,Function:Required for checkpoint mediated cell cycle arrest in response to DNA damage within both the S phase and G2/M phases of the cell cycle. May serve as a scaffold for the recruitment of DNA repair and signal transduction proteins to discrete foci of DNA damage marked by 'Ser-139' phosphorylation of histone H2AFX. Also required for downstream events subsequent to the recruitment of these proteins. These include phosphorylation and activation of the ATM , CHEK1/CHK1 and CHEK2/CHK2/CDS1 kinases , and stabilization of TP53 and apoptosis. ATM and CHEK2 may also be activated independently by a parallel pathway mediated by TP53BP1. ,PTM:Phosphorylated upon exposure to ionizing radiation (IR) , ultraviolet radiation (UV) , and hydroxyurea (HU) . Phosphorylation in response to IR requires ATM , NBN , and possibly CHEK2. Also phosphorylated during the G2/M phase of the cell cycle and during activation of the mitotic spindle checkpoint. ,sequence Caution:Translated as Gln. ,similarity:Contains 1 FHA domain. ,similarity:Contains 2 BRCT domains. ,subcellular location:Associated with chromatin. Relocalizes to discrete nuclear foci following DNA damage , this requires 'Ser-139' phosphorylation of H2AFX. ,subunit:Interacts with several proteins involved in the DNA damage response , although not all these interactions may be direct. Interacts with H2AFX , which requires phosphorylation of H2AFX on 'Ser-139'. Interacts with the MRN complex , composed of MRE11A/MRE11 , RAD50 , and NBN. Interacts with CHEK2/CHK2/CDS1 , which requires ATM-mediated phosphorylation of 'Thr-68' within the FHA domain of CHEK2. Interacts constitutively with the BRCA1-BARD1 complex , SMC1A and TP53BP1. Interacts with ATM and FANCD2 , and these interactions are reduced upon DNA damage. Also interacts with the PRKDC complex , composed of G22P1/KU70 , XRCC5/KU80 and PRKDC/XRCC7. This interaction may be required for PRKDC autophosphorylation , which is essential for DNA double strand break (DSB) repair. When phosphorylated by ATM , interacts with RNF8. Interacts with CEP164. ,tissue specificity:Highly expressed in testis. ,

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## | Validation Data



Enzyme-Linked Immunosorbent Assay (Phospho-ELISA) for Immunogen Phosphopeptide (Phospho-left) and Non-Phosphopeptide (Phospho-right), using MDC1 (Phospho-Ser513) Antibody



Immunohistochemistry analysis of paraffin-embedded human brain, using MDC1 (Phospho-Ser513) Antibody. The picture on the right is blocked with the phospho peptide.

## Contact information

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**MDC1 (Phospho Ser513) Rabbit pAb**

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