Product Name: MDC1 (phospho Ser513) Rabbit Polyclonal Antibody
Catalog #: APRab04989

Summary

Production Name	MDC1 (phospho Ser513) Rabbit Polyclonal Antibody
Description	Rabbit Polyclonal Antibody
Host	Rabbit
Application	IHC,ELISA
Reactivity	Human,Rat,Mouse

Performance

Conjugation	Unconjugated
Modification	Phospho Antibody
Isotype	IgG
Clonality	Polyclonal
Form	Liquid
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.
Buffer	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% New type preservative N.
Purification	Affinity purification

Immunogen

Gene Name	MDC1
Alternative Names	MDC1; KIAA0170; NFBD1; Mediator of DNA damage checkpoint protein 1; Nuclear factor with BRCT domains 1
Gene ID	9656.0
SwissProt ID	Q14676.The antiserum was produced against synthesized peptide derived from human MDC1 around the phosphorylation site of Ser513. AA range:479-528

Application

Dilution Ratio	IHC 1:100 - 1:300. ELISA: 1:5000..
Molecular Weight	

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Background

The protein encoded by this gene contains an N-terminal forkhead domain, two BRCA1 C-terminal (BRCT) motifs and a central domain with 13 repetitions of an approximately 41-amino acid sequence. The encoded protein is required to activate the intra-S phase and G2/M phase cell cycle checkpoints in response to DNA damage. This nuclear protein interacts with phosphorylated histone H2AX near sites of DNA double-strand breaks through its BRCT motifs, and facilitates recruitment of the ATM kinase and meiotic recombination 11 protein complex to DNA damage foci. [provided by RefSeq, Jul 2008],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.,

Research Area

Image Data

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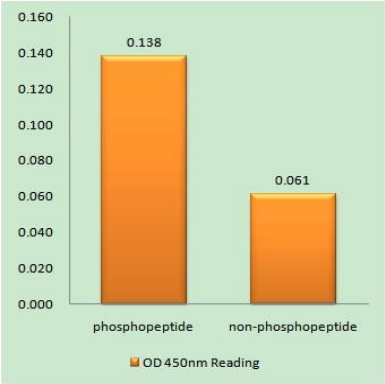
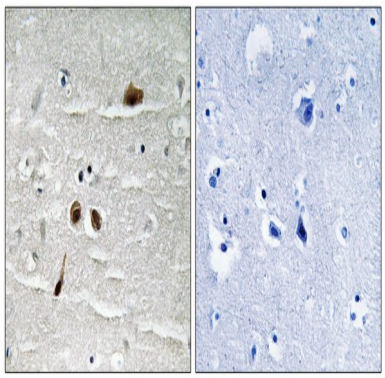


Enzyme-Linked Immunosorbent Assay （Phospho-ELISA） for Immunogen Phosphopeptide （Phospho-left） and Non-Phosphopeptide （Phospho-right）, using MDC1 （Phospho-Ser513） Antibody



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

Note

For research use only.