

Rabbit MDC1 Polyclonal Antibody | anti-MDC1 antibody

Phospho-MDC1 (Thr4) Antibody

CATALOG # AAA329249	HOST Rabbit	REACTIVITY Human, Mouse, Rat	APPLICATIONS ELISA, Immunohistochemistry
-------------------------------	-----------------------	--	--

PRODUCT SYNONYMS

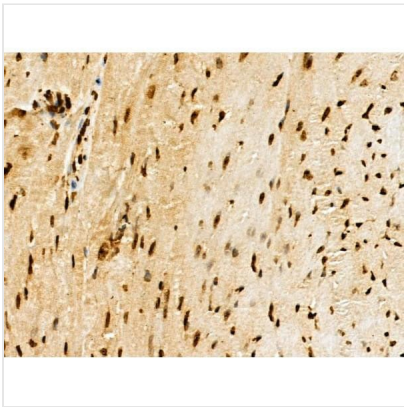
MDC1; Polyclonal Antibody; Phospho-MDC1 (Thr4) Antibody; Homologue to Drosophila photoreceptor protein calphotin; MDC 1; Mdc1; MDC1_HUMAN; Mediation of DNA damage checkpoint 1; Mediator of DNA damage checkpoint 1; Mediator of DNA damage checkpoint protein 1; NFB1; NFB1; Nuclear factor with BRCT domains 1; Nuclear Factor with BRCT Domains Protein 1; anti-MDC1 antibody

PRODUCT SPECIFICATIONS

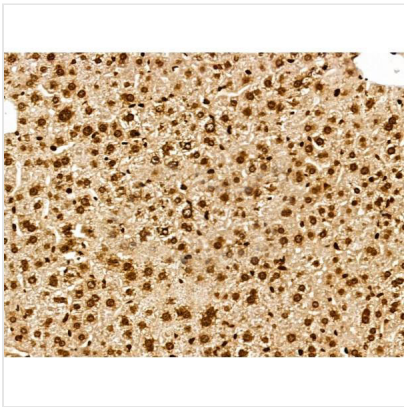
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Isotype	Rabbit IgG
Specificity	Phospho-MDC1 (Thr4) Antibody detects endogenous levels of MDC1 only when phosphorylated at Thr4. Tissue Specificity: Highly expressed in testis.
Purity/Purification	The antibody is from purified rabbit serum by affinity purification via sequential chromatography on phospho-peptide and non-phospho-peptide affinity columns.
Form/Format	Liquid. Rabbit IgG in phosphate buffered saline, pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Applicable Applications for anti-MDC1 antibody	ELISA (Peptide ELISA), IHC (Immunohistochemistry)
Immunogen	A synthesized peptide derived from human MDC1 around the phosphorylation site of Thr4.
Conjugation	Unconjugated
Fragment	Fab fragment
Post Translational Modifications	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. Phosphorylation at Thr-4 by ATM stabilizes and enhances homodimerization via the FHA domain. Sumoylation at Lys-1840 by PIAS4 following DNA damage promotes ubiquitin-mediated degradation. Ubiquitinated by RNF4, leading to proteasomal degradation; undergoes 'Lys-48'-linked polyubiquitination.
Subunit Structure	Homodimer. Interacts with several proteins involved in the DNA damage response, although not all these interactions may be direct. Interacts with H2AX, which requires phosphorylation of H2AX on 'Ser-139'. Interacts with the MRN complex, composed of MRE11, RAD50, and NBN. Interacts with CHEK2, 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 XRCC6/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 (via FHA domain). Interacts with CEP164. When phosphorylated, interacts with APTX (via FHA-like domain).
Similarity	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 H2AX.

Subcellular Location	Nucleus. Chromosome. Note: 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.
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

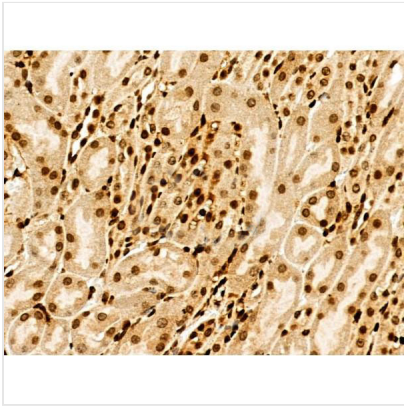
IMAGES



IHC (Immunohistochemisry)
At 1/100 staining Mouse pancreatic tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



IHC (Immunohiostchemistry)
Staining Mouse skin tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



IHC (Immunohistochemistry)
At 1/100 staining Rat liver tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.

ADDITIONAL INFORMATION

Related Product Information for anti-MDC1 antibody	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 H2AX. Also required for downstream events subsequent to the recruitment of these proteins. These include phosphorylation and activation of the ATM, CHEK1 and CHEK2 kinases, and stabilization of TP53 and apoptosis. ATM and CHEK2 may also be activated independently by a parallel pathway mediated by TP53BP1.
--	---

NCBI AND UNIPROT INFORMATION

NCBI GI #	132626688
NCBI GeneID	9656

NCBI Accession #	NP_055456.2
NCBI GenBank Nucleotide #	NM_014641.2
UniProt Accession #	Q14676 ; Q0EFC2 ; Q2L6H7 ; Q2TAZ4 ; Q5JP55 ; Q5JP56 ; Q5ST83 ; A2AB04 ; A2BF04 ; A2RRA8 ; A7YY86 ; B0S8A2
Molecular Weight	226,666 Da
NCBI Official Full Name	mediator of DNA damage checkpoint protein 1
NCBI Official Synonym Full Names	mediator of DNA-damage checkpoint 1
NCBI Official Symbol	MDC1
NCBI Official Synonym Symbols	NFBD1
NCBI Protein Information	mediator of DNA damage checkpoint protein 1; nuclear factor with BRCT domains 1; mediator of DNA damage checkpoint 1; homologue to Drosophila photoreceptor protein calphotin
UniProt Protein Name	Mediator of DNA damage checkpoint protein 1
UniProt Gene Name	MDC1
UniProt Synonym Gene Names	KIAA0170; NFBD1
UniProt Entry Name	MDC1_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

AAA Biotech | Tel: +1 (619) 604-9440 | Fax: +1 (619) 604-9441 | contact@aaabiotech.com

Online datasheet: <https://stage.aaabiotech.com/polyclonal/mdc1-antibody-peptide-elisa-immunohistochemistry-elisa/329249>