Histone H2A.X (Phospho Ser139) (PT0330R) PT™ Rabbit mAb

CatalogNo: YM8195 Recombinant

Key Features

Host Species
- Rabbit

Reactivity
- Human,Mouse,Rat,Hamster

Applications
- WB,IHC,IF,IP,ELISA

MW
- 15kD (Calculated)

15kD (Observed)

Isotype
- IgG, Kappa

Storage

Storage*	-15°C to -25°C/1 year (Do not lower than -25°C)
Formulation	PBS, 50% glycerol, 0.05% Proclin 300, 0.05%BSA

Recommended Dilution Ratios

IHC 1:2000-1:8000
WB 1:1000-1:5000
IF 1:200-1:1000
ELISA 1:5000-1:20000
IP 1:50-1:200,

Basic Information

Clonality	Monoclonal
Clone Number	PT0330R

Immunogen Information

Immunogen	The specific immunogen used to produce this antibody is proprietary information.
Specificity	This antibody detects endogenous levels of Histone H2A.X only when phosphorylated at Ser139.This antibody does not recognize phosphorylated at other sites.

Target Information

Gene name H2AFX

Protein Name Histone H2A.x

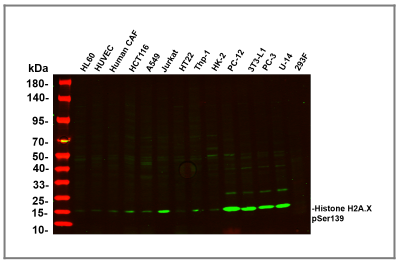
Organism	Gene ID	UniProt ID
Human	3014;	P16104;
Mouse	15270;	P27661;

Cellular Localization Nucleus

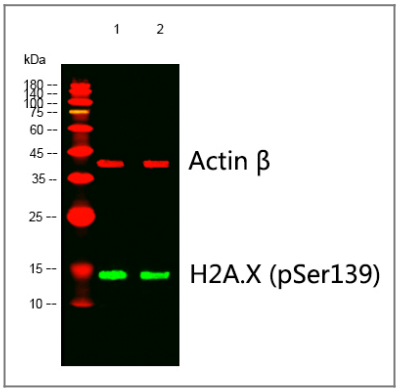
Tissue specificity Lung ,Placenta ,

Function	developmental stage:Synthesized in G1 as well as in S-phase. ,Domain:The [ST]-Q motif constitutes a recognition sequence for kinases from the PI3/PI4-kinase family. ,Function:Variant histone H2A which replaces conventional H2A in a subset of nucleosomes. Nucleosomes wrap and compact DNA into chromatin , limiting DNA accessibility to the cellular machineries which require DNA as a template. Histones thereby play a central role in transcription regulation , DNA repair , DNA replication and chromosomal stability. DNA accessibility is regulated via a complex set of post-translational modifications of histones , also called histone code , and nucleosome remodeling. Required for checkpoint-mediated arrest of cell cycle progression in response to low doses of ionizing radiation and for efficient repair of DNA double strand breaks (DSBs) specifically when modified by C-terminal phosphorylation. ,PTM:Monoubiquitination of Lys-120 (H2AXK119ub) by RING1 and RNF2/RING2 complex gives a specific tag for epigenetic transcriptional repression. Following DNA double-strand breaks (DSBs) , it is ubiquitinated through 'Lys-63' linkage of ubiquitin moieties by the E2 ligase UBE2N and the E3 ligases RNF8 and RNF168 , leading to the recruitment of repair proteins to sites of DNA damage. Monoubiquitination and ionizing radiation-induced 'Lys-63'-linked ubiquitination are distinct events. ,PTM:Phosphorylated on Ser-140 (to form gamma-H2AFX or H2AX139ph) in response to DNA double strand breaks (DSBs) generated by exogenous genotoxic agents and by stalled replication forks , and may also occur during meiotic recombination events and immunoglobulin class switching in lymphocytes. Phosphorylation can extend up to several thousand nucleosomes from the actual site of the DSB and may mark the surrounding chromatin for recruitment of proteins required for DNA damage signaling and repair. Widespread phosphorylation may also serve to amplify the damage signal or aid repair of persistent lesions. Phosphorylation of Ser-140 (H2AX139ph) in response to ionizing radiation is mediated by both ATM and PRKDC while defects in DNA replication induce Ser-140 phosphorylation (H2AX139ph) subsequent to activation of ATR and PRKDC. Dephosphorylation of Ser-140 by PP2A is required for DNA DSB repair. In meiosis , Ser-140 phosphorylation (H2AX139ph) may occur at synaptonemal complexes during leptotene as an ATM-dependent response to the formation of programmed DSBs by SPO11. Ser-140 phosphorylation (H2AX139ph) may subsequently occurs at unsynapsed regions of both autosomes and the XY bivalent during zygotene , downstream of ATR and BRCA1 activation. Ser-140 phosphorylation (H2AX139ph) may also be required for transcriptional repression of unsynapsed chromatin and meiotic sex chromosome inactivation (MSCI) , whereby the X and Y chromosomes condense in pachytene to form the heterochromatic XY-body. During immunoglobulin class switch recombination in lymphocytes , Ser-140 phosphorylation (H2AX139ph) may occur at sites of DNA-recombination subsequent to activation of the activation-induced cytidine deaminase AICDA. Phosphorylation at Tyr-143 (H2AXY142ph) by BAZ1B/WSTF determines the relative recruitment of either DNA repair or pro-apoptotic factors. Phosphorylation at Tyr-143 (H2AXY142ph) favors the recruitment of APBB1/FE65 and pro-apoptosis factors such as MAPK8/JNK1 , triggering apoptosis. In contrast , dephosphorylation of Tyr-143 by EYA proteins (EYA1 , EYA2 , EYA3 or EYA4) favors the recruitment of MDC1-containing DNA repair complexes to the tail of phosphorylated Ser-140 (H2AX139ph) . ,similarity:Belongs to the histone H2A family. ,subunit:The nucleosome is a histone octamer containing two molecules each of H2A , H2B , H3 and H4 assembled in one H3-H4 heterotetramer and two H2A-H2B heterodimers. The octamer wraps approximately 147 bp of DNA. Interacts with numerous proteins required for DNA damage signaling and repair when phosphorylated on Ser-140. These include MDC1 , TP53BP1 , BRCA1 and the MRN complex , composed of MRE11A , RAD50 , and NBN. Interaction with the MRN complex is mediated at least in part by NBN. Also interacts with DHX9/NDHII when phosphorylated on Ser-140. ,

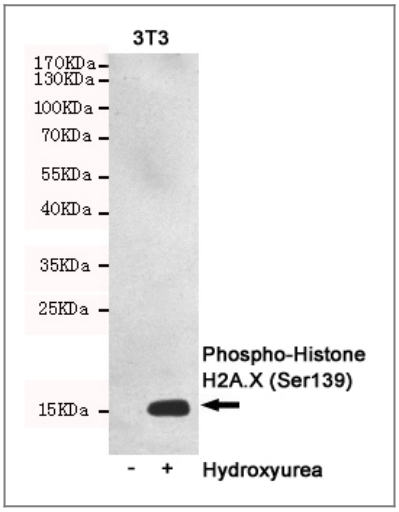
Validation Data



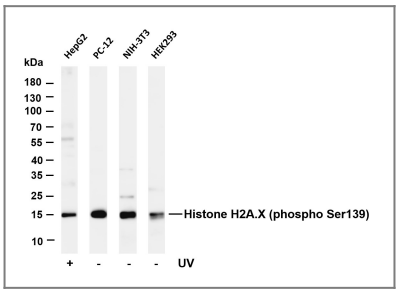
Various whole cell lysates were separated by 4-20% SDS-PAGE, and the primary antibody was used at 4℃ over night with a 1:2500 dilution . The Dilight 800-conjugated Goat anti-Rabbit antibody (Cat:RS23920) was used to detect the antibody. Lane1: HL60 - Human promyelocytic leukemia cell Lane2: HUVEC - Human umbilical vein endothelial cell Lane3: Human CAF - Human cancer-associated fibroblast Lane4: HCT116 - Human colorectal carcinoma Lane5: A549 - Human lung carcinoma Lane6: Jurkat - Human T lymphocyte leukemia Lane7: HT22 - Mouse hippocampal neuronal Lane8: Thp-1 - Human monocytic leukemia Lane9: HK-2 - Human proximal tubular epithelial Lane10: PC-12 - Rat adrenal pheochromocytoma Lane11: 3T3-L1 - Mouse embryonic fibroblast Lane12: PC-3 - Human prostate adenocarcinoma Lane13: U-14 - Mouse cervical carcinoma Lane14: 293F - HEK293 derivative, adapted for suspension culture Predicted band size: 15kDa Observed band size: 15kDa



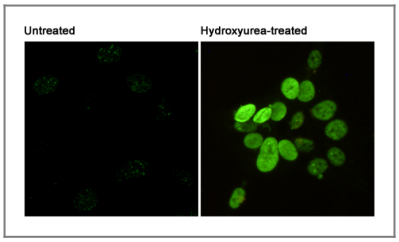
Western blot analysis of lysates from 1) 4T1, 2) 293 cells, (Green) primary antibody was diluted at 1:1000, 4℃ over night, Dilight 800 secondary antibody (Immunoway:RS23920)was diluted at 1:10000, 37° 1hour. (Red) Actin β Monoclonal Antibody (5B7) (Immunoway:YM3028) antibody was diluted at 1:5000 as loading control, 4℃ over night,Dilight 680 secondary antibody (Immunoway:RS23710)was diluted at 1:10000, 37° 1hour.



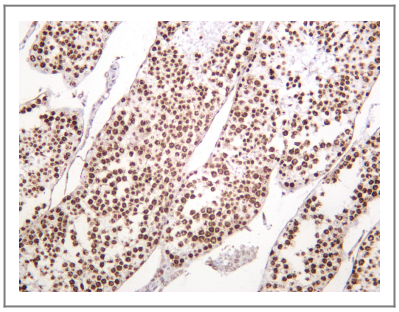
Western blot detection of Phosphorylation of H2A.X at Serine 139 in 3T3 or Hydroxyurea-treated 3T3 cell lysates using Phospho-Histone H2A.X (Ser139) mouse mAb (1:2000 diluted).Predicted band size:15KDa.Observed band size:15KDa.



Various whole cell lysates were separated by 4-20% SDS-PAGE, and the membrane was blotted with anti-Histone H2A.X (phospho Ser139) antibody. The HRP-conjugated Goat anti-Rabbit IgG (H + L) antibody was used to detect the antibody. Lane 1: HepG2 treated with UV for 30 minutes Lane 2: PC-12 Lane 3: NIH-3T3 Lane 4: HEK293 Predicted band size: 15kDa Observed band size: 15kDa



Immunofluorescent analysis of Phosphorylation of H2A.X at Serine 139 in 3T3 or Hydroxyurea-treated 3T3 cells using Phospho-Histone H2A.X



Mouse testis was stained with anti-Histone H2A.X (phospho Ser139) rabbit antibody

Contact information

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Please scan the QR code to access additional product information:
Histone H2A.X (Phospho Ser139) (PT0330R) PT™ Rabbit mAb

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