Histone H2A.X (Ab-139) polyclonal antibody

Catalog: BCP00870 Host: Rabbit Reactivity: Human,Rat,Mouse

BackGround:

Histone H2A.X is a variant histone that represents approximately 10% of the total H2A histone proteins in normal human fibroblasts. H2A.X is required for checkpoint-mediated cell cycle arrest and DNA repair following double-stranded DNA breaks. DNA damage, caused by ionizing radiation, UV-light, or radiomimetic agents, results in rapid phosphorylation of H2A.X at Ser139 by PI3K-like kinases, including ATM, ATR, and DNA-PK. Within minutes following DNA damage, H2A.X is phosphorylated at Ser139 at sites of DNA damage. This very early event in the DNA-damage response is required for recruitment of a multitude of DNA-damage response proteins, including MDC1, NBS1, RAD50, MRE11, 53BP1, and BRCA1. In addition to its role in DNA-damage repair, H2A.X is required for DNA fragmentation during apoptosis and is phosphorylated by various kinases in response to apoptotic signals. H2A.X is phosphorylated at Ser139 by DNA-PK in response to cell death receptor activation, c-Jun N-terminal Kinase (JNK1) in response to UV-A irradiation, and p38 MAPK in response to serum starvation. H2A.X is constitutively phosphorylated on Tyr142 in undamaged cells by WSTF (Williams-Beuren syndrome transcription factor). Upon DNA damage, and concurrent with phosphorylation of Ser139, Tyr142 is dephosphorylated at sites of DNA damage by recruited EYA1 and EYA3 phosphatases. While phosphorylation at Ser139 facilitates the recruitment of DNA repair proteins and apoptotic proteins to sites of DNA damage, phosphorylation at Tyr142 appears to determine which set of proteins are recruited. Phosphorylation of H2A.X at Tyr142 inhibits the recruitment of DNA repair proteins and promotes binding of pro-apoptotic factors such as JNK1. Mouse embryonic fibroblasts expressing only mutant H2A.X Y142F, which favors recruitment of DNA repair proteins over apoptotic proteins, show a reduced apoptotic response to ionizing radiation. Thus, it appears that the balance of H2A.X Tyr142 phosphorylation and dephosphorylation provides a switch mechanism to determine cell fate after DNA damage.

Product:

Rabbit IgG, 1mg/ml in PBS with 0.02% sodium azide, 50% glycerol, pH7.4.

Molecular Weight:

~ 18 kDa

Swiss-Prot:

P16104

Purification&Purity:

The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen and the purity is > 95% (by SDS-PAGE).

Applications:

WB: 1:5000~1:10000

IHC: 1:50~1:200

IF: 1:50~1:200

IP: 1:50~1:200

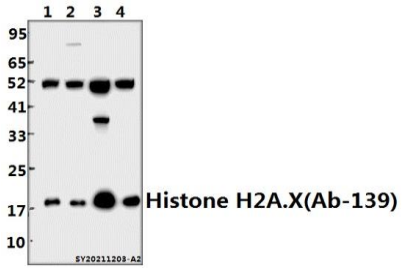
Storage&Stability:

Store at 4℃ short term. Aliquot and store at -20℃ long term. Avoid freeze-thaw cycles.

Specificity:

Histone H2A.X(Ab-139) polyclonal antibody detects endogenous levels of Histone H2A.X protein.

DATA:



Western blot (WB) analysis of Histone H2A.X (Ab-139) polyclonal antibody at 1:5000 dilution

Lane1:BV2 whole cell lysate(40ug)

Lane2:C6 whole cell lysate(40ug)

Lane3:HCT116 whole cell lysate(40ug)

Lane4:HEK293T whole cell lysate(40ug)

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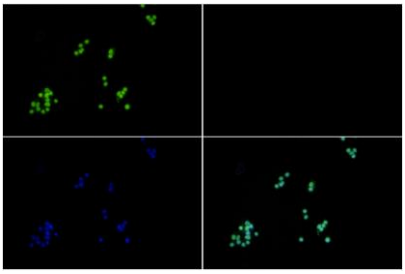
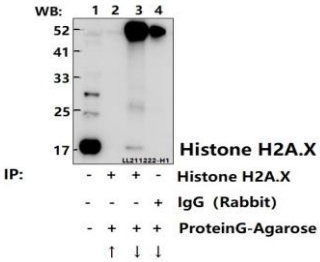
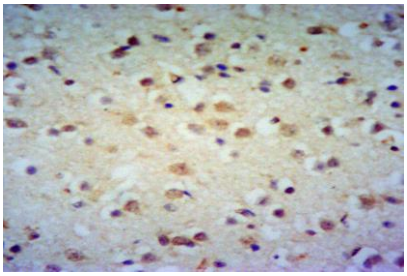


Immunofluorescence analysis of HCT116 cells using Histone H2A.X antibody at dilution of 1:50.



Immunoprecipitation of BV2 cell lysates using Histone H2A.X pAb (Sepharose Bead Conjugate)#BD0048 (lane 2 and lane 3) and Nonspecific IgG Control (Sepharose Bead Conjugate)#BD0048 (lane 4 and lane 5) .Lane 1 is 30% input. The western blot was probed using Histone H2A.X pAb.



Immunohistochemistry of paraffin-embedded Human Brain using Histone H2A.X(Ab-139) antibody at dilution of 1:50.

Note:

For research use only, not for use in diagnostic procedure.

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