SANTA CRUZ BIOTECHNOLOGY, INC.

p-Histone H2A.X (Ser 139): sc-517348

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Histone H2A.X is a member of the Histone H2A family, which is involved in nucleosomal organization of chromatin. The H2AFX gene is located in close proximity to the porphobilinogen deaminase (PBG-D) gene in both mouse and human, and maps to chromosome 9 A5.2 and 11q23.3, respectively. H2A.X differs from the other members of the H2A family by the presence of a highly conserved C-terminal motif. It is rapidly phosphorylated in response to ionizing radiation and plays an important role in the recognition and repair of DNA double stranded breaks. The phosphorylated form of H2A.X, designated γ-H2A.X, forms nuclear foci at the heavy chain constant region of cells involved in class switch recombination (CSR), a region-specific DNA reaction that replaces one immunoglobulin heavy chain constant region gene with another. The phosphorylated γ-H2A.X is also thought to initiate subsequent repair factors, including Rad50, Rad51 and BRCA1.

REFERENCES

1. Ivanova, V.S., et al. 1994. Characterization of the human Histone H2A.X gene: comparison of its promoter with other H2A gene promoters. J. Biol. Chem. 269: 24189-24194.
2. Porcher, C. and Grandchamp, B. 1995. Structure of the mouse H2A.X gene and physical linkage to the UPS locus on chromosome 9: assignment of the human H2A.X gene to 11q23 by sequence anyalysis. Genomics 25: 312-313.

CHROMOSOMAL LOCATION

Genetic locus: H2AFX (human) mapping to 11q23.3; H2afx (mouse) mapping to 9 A5.2.

SOURCE

p-Histone H2A.X (Ser 139) is a mouse monoclonal antibody raised against a recombinant protein corresponding to the Ser 139 phosphorylated region of Histone H2A.X of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and 10% glycerol.

APPLICATIONS

p-Histone H2A.X (Ser 139) is recommended for detection of Ser 139 phosphorylated Histone H2A.X of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Histone H2A.X siRNA (h): sc-62464, Histone H2A.X siRNA (m): sc-62465, Histone H2A.X shRNA Plasmid (h): sc-62464-SH, Histone H2A.X shRNA Plasmid (m): sc-62465-SH, Histone H2A.X shRNA (h) Lentiviral Particles: sc-62464-V and Histone H2A.X shRNA (m) Lentiviral Particles: sc-62465-V.

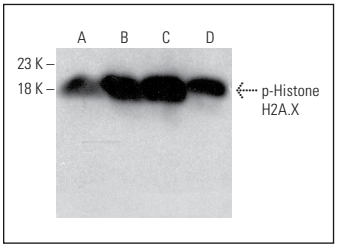
Molecular Weight of p-Histone H2A.X: 15 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225, HEK293T whole cell lysate: sc-45137 or 3T3-L1 cell lysate: sc-2243.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



p-Histone H2A.X (Ser 139): sc-517348. Western blot analysis of Histone H2A.X phosphorylation in 3T3-L1 (**A**), HEK293T (**B**), CCRF-CEM (**C**) and FHs 173We (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Todoric, J., et al. 2017. Stress-activated Nrf2-MDM2 cascade controls neoplastic progression in pancreas. Cancer Cell 32: 824-839.e8.
2. Lin, R.W., et al. 2018. P53 enhances apoptosis induced by doxorubicin only under conditions of severe DNA damage. Cell Cycle 17: 2175-2186.
3. Fang, J., et al. 2018. Melatonin prevents senescence of canine adipose-derived mesenchymal stem cells through activating NRF2 and inhibiting ER stress. Aging 10: 2954-2972.
4. Singh, V., et al. 2019. XRCC1 deficiency correlates with increased DNA damage and male infertility. Mutat. Res. 839: 1-8.
5. Wang, C. and Eskiw, C.H. 2019. Cytoprotective effects of avenathramide C against oxidative and inflammatory stress in normal human dermal fibroblasts. Sci. Rep. 9: 2932.
6. Fouquerel, E., et al. 2019. Targeted and persistent 8-oxoguanine base damage at telomeres promotes telomere loss and crisis. Mol. Cell 75: 117-130.e6.
7. Ma, J.Y., et al. 2019. The repair of endo/exogenous DNA double-strand breaks and its effects on meiotic chromosome segregation in oocytes. Hum. Mol. Genet. 28: 3422-3430.
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9. Ryu, H., et al. 2019. A small compound KJ-28d enhances the sensitivity of non-small cell lung cancer to radio- and chemotherapy. Int. J. Mol. Sci. 20: 6026.
10. Vaikari, V.P., et al. 2020. Clinical and preclinical characterization of CD99 isoforms in acute myeloid leukemia. Haematologica 105: 999-1012.

RESEARCH USE

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