SANTA CRUZ BIOTECHNOLOGY, INC.

p-Histone H3 (Ser 28): sc-12927

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

In eukaryotes, DNA is wrapped around histone octamers to form the basic unit of chromatin structure. The octamer is composed of Histones H2A, H2B, H3 and H4, and it associates with approximately 200 base pairs of DNA to form the nucleosome. The association of DNA with histones results in dense packing of chromatin, which restricts proteins involved in gene transcription from binding to DNA. Histone H3, the core protein of the nucleosome, becomes phosphorylated at the end of prophase. The two major sites of phosphorylation are the mitosis-specific site Ser 10 and Ser 28, both of which are extensively phosphorylated in DNA-bound forms of Histone H3 and in nucleosomal Histone H3. The nucleosome structure of Histone H3 promotes N-terminal phosphorylation *in vitro*.

CHROMOSOMAL LOCATION

Genetic locus: HIST1H3A (human) mapping to 6p22.2, Hist1h3a (mouse) mapping to 13 A3.1.

SOURCE

p-Histone H3 (Ser 28) is available as either goat (sc-12927) or rabbit (sc-12927-R) affinity purified polyclonal antibody raised against a short amino acid sequence containing Ser 28 phosphorylated Histone H3 of human origin.

PRODUCT

Each vial contains either 100 µg (sc-12927) or 200 µg (sc-12927-R) IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12927 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-Histone H3 (Ser 28) is recommended for detection of Ser 28 phosphorylated Histone H3 of mouse, rat, human and *Drosophila melanogaster* and *Xenopus laevis* 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-Histone H3 (Ser 28) is also recommended for detection of correspondingly phosphorylated Histone H3 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of p-Histone H3: 15 kDa.

Positive Controls: HeLa + Calyculin A cell lysate: sc-2271 or A-431 + Calyculin A cell lysate: sc-2260.

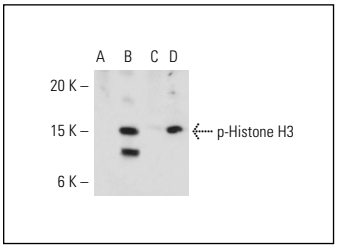
STORAGE

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

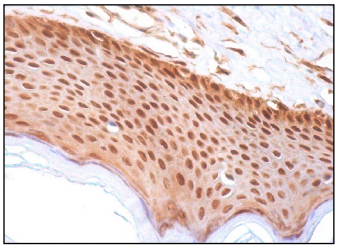
RESEARCH USE

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

DATA



p-Histone H3 (Ser 28)-R: sc-12927-R. Western blot analysis of phosphorylated Histone H3 expression in untreated HeLa (**A**), Na+ Butyrate-treated HeLa (**B**), untreated A-431 (**C**) and calyculin A-treated A-431 (**D**) whole cell lysates.



p-Histone H3 (Ser 28)-R: sc-12927-R. Immunoperoxidase staining of formalin fixed, paraffin-embedded human vulva/anal skin tissue showing nuclear staining of epidermal cells.

SELECT PRODUCT CITATIONS

1. Mistry, P., et al. 2004. NFκB promotes survival during mitotic cell cycle arrest. J. Biol. Chem. 279: 1482-1490.
2. Yu, H., et al. 2004. Late gestational lung hypoplasia in a mouse model of the Smith-Lemli-Opitz syndrome. BMC Dev. Biol. 4: 1.
3. Jay, P.Y., et al. 2007. Impaired mesenchymal cell function in GATA-4 mutant mice leads to diaphragmatic hernias and primary lung defects. Dev. Biol. 301: 602-614.
4. Boije, H., et al. 2009. Horizontal cell progenitors arrest in G_2-phase and undergo terminal mitosis on the vitreal side of the chick retina. Dev. Biol. 330: 105-113.
5. Mahajan, U.M., et al. 2011. Alteration in inflammatory/apoptotic pathway and histone modifications by nordihydroguaiaretic acid prevents acute pancreatitis in swiss albino mice. Apoptosis 16: 1138-1149.
6. Du, Y., et al. 2012. Adeno-associated virus type 2 vector-mediated glial cell line-derived neurotrophic factor gene transfer induces neuroprotection and neuroregeneration in a ubiquitin-proteasome system impairment animal model of Parkinson's disease. Neurodegener. Dis. 11: 113-128.
7. Sperka, T., et al. 2012. Puma and p21 represent cooperating checkpoints limiting self-renewal and chromosomal instability of somatic stem cells in response to telomere dysfunction. Nat. Cell Biol. 14: 73-79.
8. Kuratnik, A., et al. 2012. Acute sensitization of colon cancer cells to inflammatory cytokines by prophase arrest. Biochem. Pharmacol. 83: 1217-1228.