SANTA CRUZ BIOTECHNOLOGY, INC.

# p-Histone H3 (Ser 10)-R: sc-8656-R

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*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*. Phosphorylation of Histone H3 at Ser 10 is an essential regulatory mechanism for EGF-induced neoplastic cell transformation.

## CHROMOSOMAL LOCATION

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

## SOURCE

p-Histone H3 (Ser 10)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 10 phosphorylated Histone H3 of human origin.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-8656-R P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

p-Histone H3 (Ser 10)-R is recommended for detection of Ser 10 phosphorylated Histone H3 of mouse, rat, human, *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 10)-R 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: A-431 + Calyculin A cell lysate: sc-2260, HeLa + Calyculin A cell lysate: sc-2271 or $Na^+$ Butyrate-treated HeLa whole cell lysate.

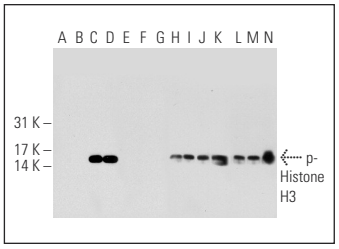
## STORAGE

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




Western blot analysis of Histone H3 phosphorlation in untreated (**A**,**H**), Trichostatin A treated (**B**,**I**) calyculin A treated (**C**,**J**), Trichostatin A and calyculin A treated (**D**,**K**), Trichostatin A and lambda protein phosphatase (sc-200312A) treated (**E**,**L**), calyculin A and lambda protein phosphatase (sc-200312A) treated (**F**,**M**) and Trichostatin A, calyculin A and lambda protein phosphatase (sc-200312A) treated (**G**,**N**) NIH/3T3 whole cell lysates. Antibodies tested include p-Histone H3 (Ser 10)-R: sc-8656-R (**A**,**B**,**C**,**D**,**E**,**F**,**G**) and Histone H3 (FL-136): sc-10809 (**H**,**I**,**J**,**K**,**L**,**M**,**N**).

## SELECT PRODUCT CITATIONS


1. Chow, J.P., et al. 2003. Differential contribution of inhibitory phosphorylation of Cdc2 and Cdk2 for unperturbed cell cycle control and DNA integrity checkpoints. J. Biol. Chem. 278: 40815-40828.
2. Chow, J.P., et al. 2003. DNA damage during the spindle-assembly checkpoint degrades Cdc25A, inhibits cyclin-Cdc2 complexes and reverses cells to interphase. Mol. Cell. Biol. 14: 3989-4002.
3. Chow, J.P. and Poon, R.Y. 2012. The CDK1 inhibitory kinase MYT1 in DNA damage checkpoint recovery. Oncogene 32: 4778-4788.
4. Chen, J. 2013. Impaired cardiovascular function caused by different stressors elicits a common pathological and transcriptional response in zebrafish embryos. Zebrafish 10: 389-400.
5. Chang, J.Y., et al. 2013. Fibroblast growth factor signaling is essential for self-renewal of dental epithelial stem cells. J. Biol. Chem. 288: 28952-28961.
6. Chen, H., et al. 2014. Salt-inducible kinase 3 is a novel mitotic regulator and a target for enhancing antimitotic therapeutic-mediated cell death. Cell Death Dis. 5: e1177.
7. Mak, J.P., et al. 2015. Pharmacological inactivation of CHK1 and WEE1 induces mitotic catastrophe in nasopharyngeal carcinoma cells. Oncotarget 6: 21074-21084.