

# Histone H2A.Z/H2A.F/Z (FL-128): sc-67218

## BACKGROUND

Histone H2A.Z/H2A.F/Z (H2A/Z) is a 128 amino acid protein encoded by the human gene H2AFZ. Eukaryotic histones are basic and water soluble nuclear proteins that form hetero-octameric nucleosome particles by wrapping 146 base pairs of DNA sequentially in a left-handed super-helical turn to form chromosomal fiber. Two molecules of each of the four core histones (H2A, H2B, H3 and H4) form the octamer, which is comprised of two H2A-H2B dimers and two H3-H4 dimers, creating two nearly symmetrical halves by tertiary structure. H2A.Z/H2A.F/Z is a 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 posttranslational modifications of histones, also called histone code, and nucleosome remodeling. H2A.Z/H2A.F/Z may be involved in the formation of constitutive heterochromatin and may be required for chromosome segregation during cell division.

## REFERENCES

- Martin, C., et al. 2005. The diverse functions of histone lysine methylation. *Nat. Rev. Mol. Cell Biol.* 6: 838-849.
- Bustin, M., et al. 2005. The dynamics of Histone H1 function in chromatin. *Mol. Cell* 17: 617-620.
- de la Cruz, X., et al. 2005. Do protein motifs read the histone code? *Bioessays* 27: 164-175.
- Gunjan, A., et al. 2005. Regulation of histone synthesis and nucleosome assembly. *Biochimie* 87: 625-635.
- Rupp, R.A., et al. 2005. Gene regulation by Histone H1: new links to DNA methylation. *Cell* 123: 1178-1179.
- Bode, A.M., et al. 2005. Inducible covalent posttranslational modification of Histone H3. *Sci. STKE* 2005: re4.

## CHROMOSOMAL LOCATION

Genetic locus: H2AFZ (human) mapping to 4q23, H2AFV (human) mapping to 7p13; H2afz (mouse) mapping to 3 G3, H2afv (mouse) mapping to 11 A1.

## SOURCE

Histone H2A.Z/H2A.F/Z (FL-128) is a rabbit polyclonal antibody raised against amino acids 1-128 representing full length Histone H2A.Z of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-67218 X, 200 µg/0.1 ml.

## STORAGE

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

## APPLICATIONS

Histone H2A.Z/H2A.F/Z (FL-128) is recommended for detection of Histone H2A.Z and Histone H2A.F/Z 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)], 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); may cross-react with other Histone H2A family members.

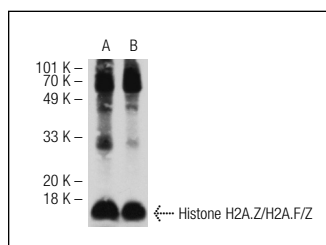
Histone H2A.Z/H2A.F/Z (FL-128) is also recommended for detection of Histone H2A.Z and Histone H2A.F/Z in additional species, including equine, canine, bovine, porcine and avian.

Histone H2A.Z/H2A.F/Z (FL-128) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

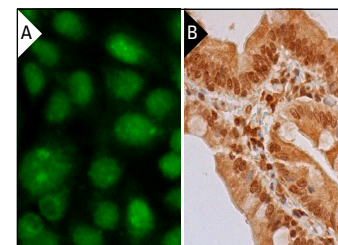
Molecular Weight of Histone H2A.Z/H2A.F/Z: 14 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, mouse placenta extract: sc-364247 or rat placenta tissue extract: sc-364808.

## DATA



Histone H2A.Z/H2A.F/Z (FL-128): sc-67218. Western blot analysis of Histone H2A.Z/H2A.F/Z expression in mouse placenta (A) and rat placenta (B) tissue extracts.



Histone H2A.Z/H2A.F/Z (FL-128): sc-67218. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear localization. Kindly provided by Yang Xiang, Ph.D., Division of Newborn Medicine, Boston Children's Hospital, Cell Biology Department, Harvard Medical School (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing nuclear and cytoplasmic staining of glandular cells (B).

## SELECT PRODUCT CITATIONS

- Huh, Y.H. and Sherley, J.L. 2011. Molecular cloaking of H2A.Z on mortal DNA chromosomes during nonrandom segregation. *Stem Cells* 29: 1620-1627.
- Zerzaihi, O., et al. 2013. Insulin-dependent transcriptional control in L6 rat myotubes is associated with modulation of histone acetylation and accumulation of the histone variant H2A.Z in the proximity of the transcriptional start site. *Biochem. Cell Biol.* 92: 61-67.

## RESEARCH USE

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