

# Histone cluster 1 H1A (S-19): sc-247153

## BACKGROUND

Histones are a superfamily of basic nuclear proteins that, together, are responsible for maintaining eukaryotic chromosomal structure. There are four core Histones, designated Histone H2A, Histone H2B, Histone H3 and Histone H4, all of which contribute two protein molecules that, together, form an octamer around which DNA is wrapped in repeating units known as nucleosomes. The Histone H1 subfamily of proteins interact with linker DNA between nucleosomes and are responsible for condensing chromatin into higher ordered structures. Histone cluster 1 H1A, also known as H1F1, H1.1 or HIST1, is a 215 amino acid protein that localizes to the nucleus. One of several members of the Histone H1 family, the Histone cluster 1 H1A is thought to play a key role in the compaction of chromatin and may, thus, be necessary for proper cell cycle progression. The gene encoding Histone cluster 1 H1A is located within a large Histone gene cluster on chromosome 6.

## REFERENCES

1. Eick, S., et al. 1989. Human H1 histones: conserved and varied sequence elements in two H1 subtype genes. *Eur. J. Cell Biol.* 49: 110-115.
2. Albig, W., et al. 1993. All known human H1 histone genes except the H1(0) gene are clustered on chromosome 6. *Genomics* 16: 649-654.
3. Lever, M.A., et al. 2000. Rapid exchange of histone H1.1 on chromatin in living human cells. *Nature* 408: 873-876.
4. Misteli, T., et al. 2000. Dynamic binding of histone H1 to chromatin in living cells. *Nature* 408: 877-881.
5. Marzluff, W.F., et al. 2002. The human and mouse replication-dependent histone genes. *Genomics* 80: 487-498.
6. Coleman, M.A., et al. 2003. Identification of chromatin-related protein interactions using protein microarrays. *Proteomics* 3: 2101-2107.
7. Hendzel, M.J., et al. 2004. The C-terminal domain is the primary determinant of histone H1 binding to chromatin *in vivo*. *J. Biol. Chem.* 279: 20028-20034.
8. Lin, Q., et al. 2004. Reductions in linker histone levels are tolerated in developing spermatocytes but cause changes in specific gene expression. *J. Biol. Chem.* 279: 23525-23535.
9. Garcia, B.A., et al. 2004. Characterization of phosphorylation sites on histone H1 isoforms by tandem mass spectrometry. *J. Proteome Res.* 3: 1219-1227.

## CHROMOSOMAL LOCATION

Genetic locus: HIST1H1A (human) mapping to 6p22.2.

## SOURCE

Histone cluster 1 H1A (S-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Histone cluster 1 H1A of human origin.

## RESEARCH USE

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

## PRODUCT

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

Blocking peptide available for competition studies, sc-247153 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Histone cluster 1 H1A (S-19) is recommended for detection of Histone cluster 1 H1A of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other Histone cluster 1 H1 family members.

Suitable for use as control antibody for Histone cluster 1 H1A siRNA (h): sc-105457, Histone cluster 1 H1A shRNA Plasmid (h): sc-105457-SH and Histone cluster 1 H1A shRNA (h) Lentiviral Particles: sc-105457-V.

Molecular Weight of Histone cluster 1 H1A: 22 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.