

# CENP-A (h): CHO Lysate: sc-110448

## BACKGROUND

A replicated chromosome includes two kinetochores that control chromosome segregation during mitosis. Centromere protein-A (CENP-A) is a Histone H3-like protein that contains a C-terminal H3-like domain, required for centromere localization of CENP-A, and an antigenic N-terminal domain. CENP-A, originally isolated from HeLa cells, is essential for kinetochore targeting of CENP-C. In the presence of DNA, CENP-A forms an octameric complex with Histones H4, H2A and H2B. CENP-A specifically localizes to active centromeres and is a component of specialized centromeric nucleosomes, on which kinetochores are assembled. CENP-A is essential for nucleosomal packaging of centromeric DNA at interphase and functions as a centromere formation marker on the chromosome.

## REFERENCES

1. Rieder, C.L., et al. 1998. The vertebrate cell kinetochore and its roles during mitosis. *Trends Cell Biol.* 8: 310-318.
2. Choo, K.H. 2000. Centromerization. *Trends Cell Biol.* 10: 182-188.
3. Muro, Y., et al. 2000. Autoepitopes on autoantigen centromere protein-A (CENP-A) are restricted to the N-terminal region, which has no homology with Histone H3. *Clin. Exp. Immunol.* 120: 218-223.
4. Howman, E.V., et al. 2000. Early disruption of centromeric chromatin organization in centromere protein-A (CENP-A) null mice. *Proc. Natl. Acad. Sci. USA* 97: 1148-1153.
5. Yoda, K., et al. 2000. Human centromere protein-A (CENP-A) can replace Histone H3 in nucleosome reconstitution *in vitro*. *Proc. Natl. Acad. Sci. USA* 97: 7266-7271.
6. Black, B.E., et al. 2007. Centromere identity maintained by nucleosomes assembled with Histone H3 containing the CENP-A targeting domain. *Mol. Cell* 25: 309-322.
7. Okamoto, Y., et al. 2007. A minimal CENP-A core is required for nucleation and maintenance of a functional human centromere. *EMBO J.* 26: 1279-1291.
8. Maddox, P.S., et al. 2007. Functional genomics identifies a Myb domain-containing protein family required for assembly of CENP-A chromatin. *J. Cell Biol.* 176: 757-763.
9. Black, B.E., et al. 2007. An epigenetic mark generated by the incorporation of CENP-A into centromeric nucleosomes. *Proc. Natl. Acad. Sci. USA* 104: 5008-5013.

## CHROMOSOMAL LOCATION

Genetic locus: CENPA (human) mapping to 2p23.3.

## PRODUCT

CENP-A (h): CHO Lysate represents a lysate of human CENP-A transfected CHO cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

## RESEARCH USE

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

## APPLICATIONS

CENP-A (h): CHO Lysate is suitable as a Western Blotting positive control for human reactive CENP-A antibodies. Recommended use: 10-20 µl per lane.

Control CHO Lysate: sc-117750 is available as a Western Blotting negative control lysate derived from non-transfected CHO cells.

## STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## PROTOCOLS

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