

# CENP-K (40.3): sc-81831

## BACKGROUND

During mitosis, the transient assembly of the kinetochore occurs on a platform known as the centromere, a specialized chromatin structure that is comprised of various centromere proteins (CENPs). There are two multi-protein centromere complexes, known as CENPA-NAC (nucleosome-associated) and CENPA-CAD (nucleosome distal), which interact with one another to facilitate both the assembly and the activity of the centromere. CENP-K (centromere protein K), also known as P33, Solt, FKSG14, AF5 $\alpha$  or ICEN37, is a 269 amino acid component of the CENPA-CAD complex. Localized exclusively to the centromere, CENP-K is thought to be involved in mitotic progression, chromosome segregation and the assembly and incorporation of kinetochore proteins into centromeres. CENP-K is expressed at high levels in fetal liver and at lower levels in adult placenta and lung. Defects in the gene encoding CENP-K are associated with acute leukemias, suggesting that CENP-K plays a role in carcinogenesis.

## REFERENCES

1. Taki, T., et al. 1996. Fusion of the MLL gene with two different genes, AF-6 and AF-5 $\alpha$ , by a complex translocation involving chromosomes 5, 6, 8 and 11 in infant leukemia. *Oncogene* 13: 2121-2130.
2. Yamashita, A., et al. 2000. Characterization of Solt, a novel SoxLZ/Sox6 binding protein expressed in adult mouse testis. *FEBS Lett.* 481: 147-151.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611502. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Obuse, C., et al. 2004. Proteomics analysis of the centromere complex from HeLa interphase cells: UV-damaged DNA binding protein 1 (DDB-1) is a component of the CEN-complex, while BMI-1 is transiently co-localized with the centromeric region in interphase. *Genes Cells* 9: 105-120.
5. Izuta, H., et al. 2006. Comprehensive analysis of the ICEN (interphase centromere complex) components enriched in the CENP-A chromatin of human cells. *Genes Cells* 11: 673-684.
6. Okada, M., et al. 2006. The CENP-H-I complex is required for the efficient incorporation of newly synthesized CENP-A into centromeres. *Nat. Cell Biol.* 8: 446-457.

## CHROMOSOMAL LOCATION

Genetic locus: CENPK (human) mapping to 5q12.3.

## SOURCE

CENP-K (40.3) is a mouse monoclonal antibody raised against recombinant CENP-K of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## RESEARCH USE

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

## APPLICATIONS

CENP-K (40.3) is recommended for detection of CENP-K of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], 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).

Suitable for use as control antibody for CENP-K siRNA (h): sc-91868, CENP-K shRNA Plasmid (h): sc-91868-SH and CENP-K shRNA (h) Lentiviral Particles: sc-91868-V.

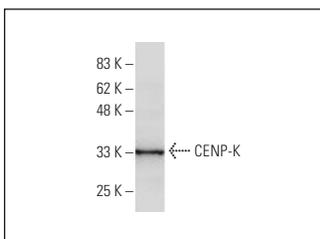
Molecular Weight of CENP-K: 32 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

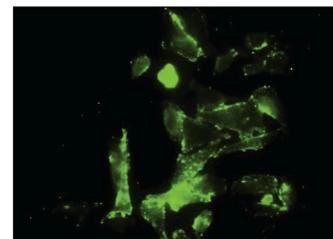
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



CENP-K (40.3): sc-81831. Western blot analysis of CENP-K expression in Hep G2 whole cell lysate.



CENP-K (40.3): sc-81831. Immunofluorescence staining of paraformaldehyde-fixed Hep G2 cells showing nuclear and cytoplasmic localization.

## SELECT PRODUCT CITATIONS

1. Hu, L., et al. 2019. Structural analysis of fungal CENP-H/I/K homologs reveals a conserved assembly mechanism underlying proper chromosome alignment. *Nucleic Acids Res.* 47: 468-479.
2. Hu, L., et al. 2023. CENP-I directly targets centromeric DNA to support CENP-A deposition and centromere maintenance. *Proc. Natl. Acad. Sci. USA* 120: e2219170120.

## STORAGE

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