

# kleisin $\beta$ (K-14): sc-86503

## BACKGROUND

Chromosome formation and subsequent function require the activity of two condensin complexes, namely condensin I and condensin II, both of which are crucial for proper mitotic chromosome assembly and segregation. Kleisin  $\beta$ , also known as NCAH2 (non-SMC condensin II complex, subunit H2) or CAPH2, is a 605 amino acid protein that localizes to the nucleus and is specifically distributed along the arms of assembled chromosomes. Existing as a component of the condensin II complex, kleisin  $\beta$  functions as a regulatory protein that assists in establishing mitotic chromosome architecture, possibly by providing an increased level of organization and rigidity to formed chromosomes. In response to DNA damage, kleisin  $\beta$  is subject to phosphorylation by ATM or ATR. Multiple isoforms of kleisin  $\beta$  exist due to alternative splicing events.

## REFERENCES

1. Ono, T., et al. 2003. Differential contributions of condensin I and condensin II to mitotic chromosome architecture in vertebrate cells. *Cell* 115: 109-121.
2. Schleiffer, A., et al. 2003. Kleisins: a superfamily of bacterial and eukaryotic SMC protein partners. *Mol. Cell* 11: 571-575.
3. Onn, I., et al. 2007. Reconstitution and subunit geometry of human condensin complexes. *EMBO J.* 26: 1024-1034.
4. Gosling, K.M., et al. 2007. A mutation in a chromosome condensin II subunit, kleisin  $\beta$ , specifically disrupts T cell development. *Proc. Natl. Acad. Sci. USA* 104: 12445-12450.
5. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611230. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Gosling, K.M., et al. 2008. Defective T cell function leading to reduced antibody production in a kleisin- $\beta$  mutant mouse. *Immunology* 125: 208-217.

## CHROMOSOMAL LOCATION

Genetic locus: NCAH2 (human) mapping to 22q13.33.

## SOURCE

kleisin  $\beta$  (K-14) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of kleisin  $\beta$  of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-86503 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

kleisin  $\beta$  (K-14) is recommended for detection of kleisin  $\beta$  of human and rat 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).

kleisin  $\beta$  (K-14) is also recommended for detection of kleisin  $\beta$  in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for kleisin  $\beta$  siRNA (h): sc-75388, kleisin  $\beta$  shRNA Plasmid (h): sc-75388-SH and kleisin  $\beta$  shRNA (h) Lentiviral Particles: sc-75388-V.

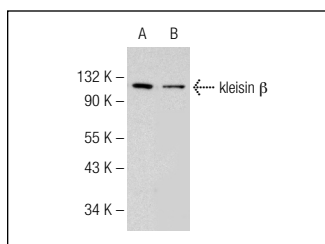
Molecular Weight of kleisin  $\beta$ : 90 kDa.

Positive Controls: SK-N-MC nuclear extract: sc-2154, HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



kleisin  $\beta$  (K-14): sc-86503. Western blot analysis of kleisin  $\beta$  expression in HeLa whole cell lysate (A) and SK-N-MC nuclear extract (B).

## RESEARCH USE

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

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Try **kleisin  $\beta$  (B-1): sc-393333**, our highly recommended monoclonal alternative to kleisin  $\beta$  (K-14).