

kleisin β (B-1): sc-393333

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 β , also known as NCAPH2 (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 β 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 β is subject to phosphorylation by ATM or ATR. Multiple isoforms of kleisin β 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 β , specifically disrupts T cell development. *Proc. Natl. Acad. Sci. USA* 104: 12445-12450.

CHROMOSOMAL LOCATION

Genetic locus: NCAPH2 (human) mapping to 22q13.33; NcapH2 (mouse) mapping to 15 E3.

SOURCE

kleisin β (B-1) is a mouse monoclonal antibody raised against amino acids 437-606 mapping at the C-terminus of kleisin β of human origin.

PRODUCT

Each vial contains 200 μ g IgG γ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

kleisin β (B-1) is available conjugated to agarose (sc-393333 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393333 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393333 PE), fluorescein (sc-393333 FITC), Alexa Fluor[®] 488 (sc-393333 AF488), Alexa Fluor[®] 546 (sc-393333 AF546), Alexa Fluor[®] 594 (sc-393333 AF594) or Alexa Fluor[®] 647 (sc-393333 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-393333 AF680) or Alexa Fluor[®] 790 (sc-393333 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

kleisin β (B-1) is recommended for detection of kleisin β of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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 kleisin β siRNA (h): sc-75388, kleisin β siRNA (m): sc-146495, kleisin β shRNA Plasmid (h): sc-75388-SH, kleisin β shRNA Plasmid (m): sc-146495-SH, kleisin β shRNA (h) Lentiviral Particles: sc-75388-V and kleisin β shRNA (m) Lentiviral Particles: sc-146495-V.

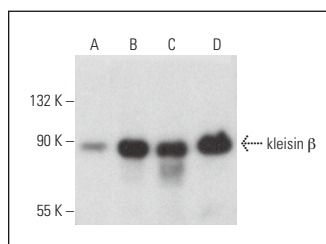
Molecular Weight of kleisin β : 90 kDa.

Positive Controls: NCI-H460 whole cell lysate: sc-364235, SK-N-MC nuclear extract: sc-2154 or HeLa nuclear extract: sc-2120.

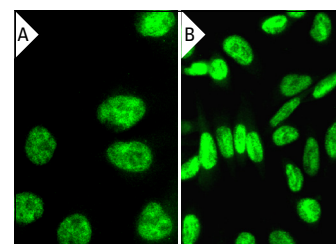
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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 κ BP-FITC: sc-516140 or m-IgG κ 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



kleisin β (B-1): sc-393333. Western blot analysis of kleisin β expression in NCI-H460 whole cell lysate (A) and SK-N-MC (B), Jurkat (C) and HeLa (D) nuclear extracts.



kleisin β (B-1): sc-393333. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (A). Immunofluorescence staining of formalin-fixed SW480 cells showing nuclear localization (B).

SELECT PRODUCT CITATIONS

1. Wu, S., et al. 2019. ARID1A spatially partitions interphase chromosomes. *Sci. Adv.* 5: eaaw5294.
2. Flashner, S., et al. 2022. Transcription factor Sp1 regulates mitotic chromosome assembly and segregation. *Chromosoma* 131: 175-191.

RESEARCH USE

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