

hCAP-D2 (D-3): sc-166878

BACKGROUND

The condensin complex plays a role in the resolution and segregation of sister chromatids during mitosis and some aspects of mitotic chromosome assembly. Cdc2 phosphorylation of the complex leads to its activation and its association with chromosome arms and condensation. Condensin complexes are heteropentamers comprised of two SMC (structural maintenance of chromosomes) subunits and three non-SMC subunits. The SMC family includes SMC1 (also known as SMC1 α and SCMB), which associates with SMC3 (also known as hCAP and Bamacan); SMC2 (also known as hCAP-E), which associates with SMC4 (also known as hCAP-C); and SMC5, which associates with SMC6. Non-SMC subunits help regulate the complex and include hCAP-D2, hCAP-H and hCAP-G. The C-terminus of hCAP-D2 interacts with Histones H1 and H3 through their histone tails. A loss of hCAP-D2 can lead to the disorganization of chromatid axes, misalignment of sister chromatids during metaphase and delayed entry into anaphase.

REFERENCES

1. Steen, R.L., et al. 2000. A kinase-anchoring protein (AKAP)95 recruits human chromosome-associated protein (hCAP)-D2/Eg7 for chromosome condensation in mitotic extract. *J. Cell Biol.* 149: 531-536.
2. Kimura, K., et al. 2001. Chromosome condensation by a human condensin complex in *Xenopus* egg extracts. *J. Biol. Chem.* 276: 5417-5420.
3. Ball, A.R., et al. 2002. Identification of a chromosome-targeting domain in the human condensin subunit CNAP1/hCAP-D2/Eg7. *Mol. Cell. Biol.* 22: 5769-5781.
4. Watrin, E. and Legagneux, V. 2005. Contribution of hCAP-D2, a non-SMC subunit of condensin I, to chromosome and chromosomal protein dynamics during mitosis. *Mol. Cell. Biol.* 25: 740-750.

CHROMOSOMAL LOCATION

Genetic locus: NCAPD2 (human) mapping to 12p13.31.

SOURCE

hCAP-D2 (D-3) is a mouse monoclonal antibody raised against amino acids 1102-1401 mapping at the C-terminus of hCAP-D2 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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 for detailed protocols and support products.

APPLICATIONS

hCAP-D2 (D-3) is recommended for detection of hCAP-D2 of 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 hCAP-D2 siRNA (h): sc-60774, hCAP-D2 shRNA Plasmid (h): sc-60774-SH and hCAP-D2 shRNA (h) Lentiviral Particles: sc-60774-V.

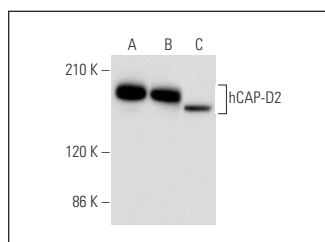
Molecular Weight of hCAP-D2: 155 kDa.

Positive Controls: Ramos cell lysate: sc-2216, K-562 whole cell lysate: sc-2203 or U-251-MG whole cell lysate: sc-364176.

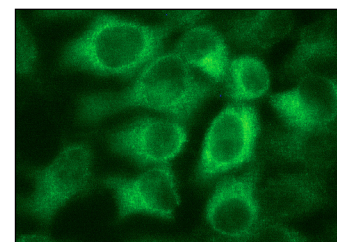
RECOMMENDED SUPPORT REAGENTS

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



hCAP-D2 (D-3): sc-166878. Western blot analysis of hCAP-D2 expression in Ramos (A), K-562 (B) and U-251-MG (C) whole cell lysates.



hCAP-D2 (D-3): sc-166878. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Yokoyama, Y., et al. 2015. A novel role for the condensin II complex in cellular senescence. *Cell Cycle* 14: 2160-2170.
2. Ward, J.R., et al. 2022. Condensin I and condensin II proteins form a LINE-1 dependent super condensin complex and cooperate to repress LINE-1. *Nucleic Acids Res.* E-published.

RESEARCH USE

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