SANTA CRUZ BIOTECHNOLOGY, INC.

hCAP-D2 (294.1): sc-101012

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 hetero-pentamers comprised of two SMC (structural maintenance of chromosomes) subunits and three non-SMC subunits. The SMC family includes SMC1 (also known as SMC1α 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., Cubizolles, F., Le Guellec, K. and Collas, P. 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., Cuvier, O. and Hirano, T. 2001. Chromosome condensation by a human condensin complex in *Xenopus* egg extracts. J. Biol. Chem. 276: 5417-5420.
3. Ball, A.R., Schmiesing, J.A., Zhou, C., Gregson, H.C., Okada, Y., Doi, T. and Yokomori, K. 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 (294.1) is a mouse monoclonal antibody raised against recombinant hCAP-D2 of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 kappa light chain in 0.5 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 (294.1) is recommended for detection of hCAP-D2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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.

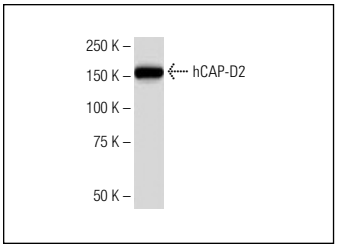
Molecular Weight of hCAP-D2: 155 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, human hCAP-D2 transfected 293T whole cell lysate or Jurkat whole cell lysate: sc-2204.

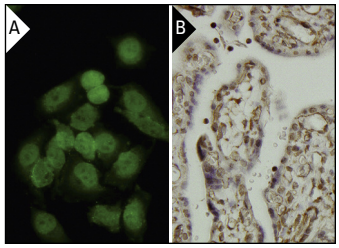
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 (294.1): sc-101012. Western blot analysis of hCAP-D2 expression in HeLa whole cell lysate.



hCAP-D2 (294.1): sc-101012. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human placenta tissue showing nuclear and cytoplasmic localization (**B**).

RESEARCH USE

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