

hCAP-D3 (2B5): sc-81597

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 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. hCAP-D3 (non-SMC condensin II complex subunit D3), also known as NCAPD3 or KIAA0056, is a 1,498 amino acid nuclear protein that contains four HEAT repeats and is a member of the condensin-2 complex.

REFERENCES

- Nomura, N., et al. 1994. Prediction of the coding sequences of unidentified human genes. II. The coding sequences of 40 new genes (KIAA0041-KIAA0080) deduced by analysis of cDNA clones from human cell line KG-1. DNA Res. 1: 223-229.
- 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.
- Kimura, K., et al. 2001. Chromosome condensation by a human condensin complex in *Xenopus* egg extracts. J. Biol. Chem. 276: 5417-5420.
- 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.

CHROMOSOMAL LOCATION

Genetic locus: NCAPD3 (human) mapping to 11q25; Ncapd3 (mouse) mapping to 9 A4.

SOURCE

hCAP-D3 (2B5) is a mouse monoclonal antibody raised against His-tagged recombinant peptide corresponding to amino acids 706-917 of hCAP-D3 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.

hCAP-D3 (2B5) is available conjugated to agarose (sc-81597 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-81597 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-81597 PE), fluorescein (sc-81597 FITC), Alexa Fluor[®] 488 (sc-81597 AF488), Alexa Fluor[®] 546 (sc-81597 AF546), Alexa Fluor[®] 594 (sc-81597 AF594) or Alexa Fluor[®] 647 (sc-81597 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-81597 AF680) or Alexa Fluor[®] 790 (sc-81597 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

hCAP-D3 (2B5) is recommended for detection of hCAP-D3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for hCAP-D3 siRNA (h): sc-96768, Ncapd3 siRNA (m): sc-149851, hCAP-D3 shRNA Plasmid (h): sc-96768-SH, Ncapd3 shRNA Plasmid (m): sc-149851-SH, hCAP-D3 shRNA (h) Lentiviral Particles: sc-96768-V and Ncapd3 shRNA (m) Lentiviral Particles: sc-149851-V.

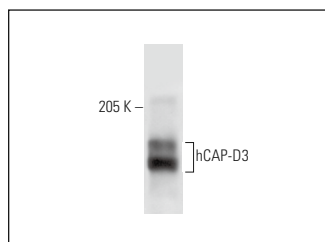
Molecular Weight of hCAP-D3: 165 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, THP-1 nuclear extract: sc-24963 or HeLa whole cell lysate: sc-2200.

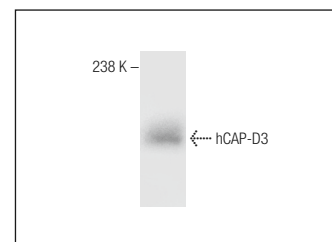
RECOMMENDED SUPPORT REAGENTS

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).

DATA



hCAP-D3 (2B5): sc-81597. Western blot analysis of hCAP-D3 expression in HeLa whole cell lysate.



hCAP-D3 (2B5): sc-81597. Western blot analysis of hCAP-D3 expression in THP-1 nuclear extract.

SELECT PRODUCT CITATIONS

- Kong, M., et al. 2020. Human condensin I and II drive extensive ATP-dependent compaction of nucleosome-bound DNA. Mol. Cell 79: 99-114.e9.
- Houlard, M., et al. 2021. MCPH1 inhibits condensin II during interphase by regulating its SMC2-kleisin interface. Elife 10: e73348.

STORAGE

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

RESEARCH USE

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