

# hCAP-D3 (283.7): sc-101016

## 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 $\alpha$  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

1. 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.
2. 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.
3. Kimura, K., et al. 2001. Chromosome condensation by a human condensin complex in *Xenopus* egg extracts. *J. Biol. Chem.* 276: 5417-5420.
4. 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.
5. 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.
6. Lapointe, J., et al. 2008. hCAP-D3 expression marks a prostate cancer subtype with favorable clinical behavior and androgen signaling signature. *Am. J. Surg. Pathol.* 32: 205-209.

## CHROMOSOMAL LOCATION

Genetic locus: NCAPD3 (human) mapping to 11q25.

## SOURCE

hCAP-D3 (283.7) is a mouse monoclonal antibody raised against recombinant hCAP-D3 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> 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.

## APPLICATIONS

hCAP-D3 (283.7) is recommended for detection of hCAP-D3 of human 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), 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-D3 siRNA (h): sc-96768, hCAP-D3 shRNA Plasmid (h): sc-96768-SH and hCAP-D3 shRNA (h) Lentiviral Particles: sc-96768-V.

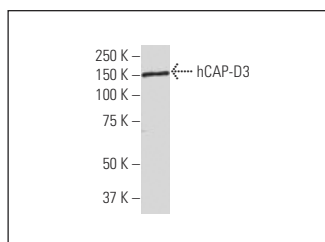
Molecular Weight of hCAP-D3: 165 kDa.

Positive Controls: HeLa nuclear extract: sc-2120 or HeLa whole cell lysate: sc-2200.

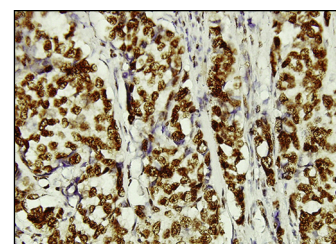
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



hCAP-D3 (283.7): sc-101016. Western blot analysis of hCAP-D3 expression in HeLa nuclear extract.



hCAP-D3 (283.7): sc-101016. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast cancer tissue showing nuclear localization.

## SELECT PRODUCT CITATIONS

1. Jing, Z., et al. 2022. NCAPD3 promotes prostate cancer progression by up-regulating EZH2 and MALAT1 through STAT3 and E2F1. *Cell. Signal.* 92: 110265.

## RESEARCH USE

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