

Centrin-3 (SS12): sc-100933

BACKGROUND

The EF-hand type Ca²⁺-binding proteins family consists of several members, including Centrin-1, Centrin-2 and Centrin-3. The centrin proteins are ubiquitously expressed cytoskeletal components that show increased expression during cell differentiation. Tissues where cilia are present, such as the retina and testis, express both Centrin-1 and -2, but Centrin-2 is also expressed in nondifferentiated, nonciliated retinal cells (retinoblastoma cells), liver, skeletal muscle and cardiac muscle. In these tissues, centrin associates with the centrosomes, mitotic spindle poles and basal bodies. Knockdown studies reveal a requirement for centrin in centriole duplication and organization of spindle pole morphology and the completion of cytokinesis. Centrin-3 plays a role in centrosome reproduction.

REFERENCES

1. LeDizet, M., et al. 1998. Differential regulation of centrin genes during ciliogenesis in human trachealepithelial cells. *Am. J. Physiol.* 275: L1145-L1156.
2. Wolfrum, U., et al. 1998. Expression of centrin isoforms in the mammalian retina. *Exp. Cell Res.* 242: 10-17.
3. Durussel, I., et al. 2000. Cation- and peptide-binding properties of human Centrin-2. *FEBS Lett.* 472: 208-212.
4. Laoukili, J., et al. 2000. Differential expression and cellular distribution of centrin isoforms during human ciliated cell differentiation *in vitro*. *J. Cell Sci.* 113: 1355-1364.
5. Middendorp, S., et al. 2000. A role for Centrin-3 in centrosome reproduction. *J. Cell Biol.* 148: 405-416.
6. Araki, M., et al. 2001. Centrosome protein Centrin-2/caltractin 1 is part of the xeroderma pigmentosum group C complex that initiates global genome nucleotide excision repair. *J. Biol. Chem.* 276: 18665-18672.
7. Rice, L.M., et al. 2002. Centriole duplication: centrin in on answers? *Curr. Biol.* 12: R618-R619.
8. Salisbury, J.L., et al. 2002. Centrin-2 is required for centriole duplication in mammalian cells. *Curr. Biol.* 12: 1287-1292.

CHROMOSOMAL LOCATION

Genetic locus: CETN3 (human) mapping to 5q14.3; Cctn3 (mouse) mapping to 13 C3.

SOURCE

Centrin-3 (SS12) is a mouse monoclonal antibody raised against recombinant Centrin-3 of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2b} 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.

APPLICATIONS

Centrin-3 (SS12) is recommended for detection of Centrin-3 of mouse, rat and 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Centrin-3 siRNA (h): sc-60361, Centrin-3 siRNA (m): sc-60362, Centrin-3 shRNA Plasmid (h): sc-60361-SH, Centrin-3 shRNA Plasmid (m): sc-60362-SH, Centrin-3 shRNA (h) Lentiviral Particles: sc-60361-V and Centrin-3 shRNA (m) Lentiviral Particles: sc-60362-V.

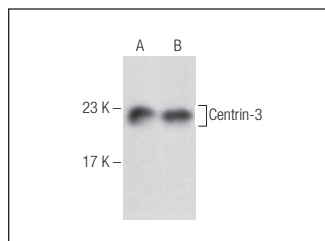
Molecular Weight of Centrin-3: 20 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, RAW 264.7 whole cell lysate or Jurkat whole cell lysate: sc-2204.

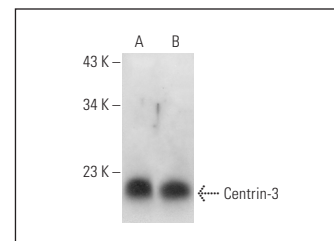
RECOMMENDED SUPPORT REAGENTS

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, 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



Centrin-3 (SS12): sc-100933. Western blot analysis of Centrin-3 expression in RAW 264.7 whole cell lysate (A) and rat testis tissue extract (B).



Centrin-3 (SS12): sc-100933. Western blot analysis of Centrin-3 expression in Jurkat (A) and HeLa (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Dzhindzhev, N.S., et al. 2010. Asterless is a scaffold for the onset of centriole assembly. *Nature* 467: 714-718.
2. Pagan, J.K., et al. 2015. Degradation of CEP68 and PCNT cleavage mediate Cep215 removal from the PCM to allow centriole separation, disengagement and licensing. *Nat. Cell Biol.* 17: 31-43.
3. Fung, E., et al. 2018. FBXL13 directs the proteolysis of CEP192 to regulate centrosome homeostasis and cell migration. *EMBO Rep.* 19 pii: e44799.

RESEARCH USE

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