SANTA CRUZ BIOTECHNOLOGY, INC.

ncd (dS-17): sc-22331

BACKGROUND

The microtubule cytoskeleton functions as a framework for a wide variety of intracellular movements. Microtubule motors bind to and move unidirectionally on microtubules, and may generate the force required for spindle assembly and maintenance, attachment of the chromosomes to the spindle, and movement of chromosomes toward opposite poles. These movements are powered by members of the kinesin superfamily. In *Drosophila*, non-claret disjunctional (ncd) is an unusual member of the kinesin family that moves opposite to kinesin, toward the microtubule minus end. ncd acts to maintain centrosome integrity and attachment to nuclei, contributes to midbody stability and helps to prevent chromosome loss during the early mitotic divisions. It is also required for chromosome segregation during meiosis in oocytes. The conserved motor domain (340 amino acids long) of ncd is globular in structure and is at the carboxy terminus. This region encompasses an ATP and microtubule binding site and is sufficient for force generation and microtubule motor activity.

REFERENCES

1. Hatsumi, M. and Endow, S.A. 1992. The *Drosophila* ncd microtubule motor protein is spindle-associated in meiotic and mitotic cells. J. Cell. Sci. 103: 1013-1020.
2. Chandra, R., Salmon, E.D., Erickson, H.P., Lockhart, A. and Endow, S.A. 1993. Structural and functional domains of the *Drosophila* ncd microtubule motor protein. J. Biol. Chem. 268: 9005-9013.
3. Stewart, R.J., Thaler, J.P. and Goldstein, L.S. 1993. Direction of microtubule movement is an intrinsic property of the motor domains of kinesin heavy chain and *Drosophila* ncd protein. Proc. Natl. Acad. Sci. USA 90: 5209-5213.
4. Endow, S.A., Chandra, R., Komma, D.J., Yamamoto, A.H. and Salmon, E.D. 1994. Mutants of the *Drosophila* ncd microtubule motor protein cause centrosomal and spindle pole defects in mitosis. J. Cell. Sci. 107: 859-867.
5. Endow, S.A. and Komma, D.J. 1996. Centrosome and spindle function of the *Drosophila* ncd microtubule motor visualized in live embryos using ncd-GFP fusion proteins. J. Cell. Sci. 109: 2429-2442.

SOURCE

ncd (dS-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of ncd of *Drosophila melanogaster* origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-22331 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

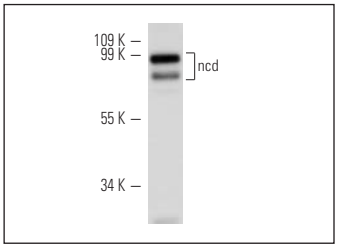
ncd (dS-17) is recommended for detection of ncd of *Drosophila melanogaster* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 µg per 100–500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Positive Controls: Schneider's *Drosophila* line 2.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



ncd (dS-17): sc-22331. Western blot analysis of ncd expression in Schneider's *Drosophila* line 2 whole cell lysate.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.