

# Klp3 (cN-20): sc-15645

## BACKGROUND

Kinesins are cytoskeletal multimeric motor proteins that mediate intracellular transport on microtubule tracks, using ATP hydrolysis. C-terminal kinesin motor proteins, such as the *Drosophila* NCD and yeast KAR3, are involved in chromosomal segregation, as are Klp3 and Klp17, the NCD orthologs in *C. elegans*. The Klp3 gene encodes a kinesin protein that is mapped to *C. elegans* chromosome LGII. Klp3 mRNA is expressed at low levels during development, and its expression is limited to the marginal cells in the pharynx and a group of muscle cells in the posterior gut region. The Klp3 gene contains C-terminal ATP binding and microtubule binding sites. Overexpression of the Klp3 gene partially rescues the lethal phenotype of the maternal lethal him-14 ts(it44) mutants at non-permissive temperatures and reduces the incidence of males caused by non-disjunction of the X-chromosome. Klp3 antisense RNA causes embryonic arrest, dead eggs and polyploid cells in transgenic lines. These results indicate that Klp3 plays a critical role in chromosome segregation during development in *C. elegans*.

## REFERENCES

1. Khan, M.L., Gogonea, C.B., Siddiqui, Z.K., Ali, M.Y., Kikuno, R., Nishikawa, K. and Siddiqui, S.S. 1997. Molecular cloning and expression of the *Caenorhabditis elegans* Klp-3, an ortholog of C-terminus motor kinesins Kar3 and ncd. *J. Mol. Biol.* 270: 627-639.
2. Dorner, C., Ciossek, T., Muller, S., Moller, P.H., Ullrich, A. and Lammers, R. 1998. Characterization of KIF1C, a new kinesin-like protein involved in vesicle transport from the Golgi apparatus to the endoplasmic reticulum. *J. Biol. Chem.* 273: 20267-20275.
3. Khan, M.L., Ali, M.Y., Siddiqui, Z.K., Shakir, M.A., Ohnishi, H., Nishikawa, K. and Siddiqui, S.S. 2000. *C. elegans* KLP-11/OSM-3/KAP-1: orthologs of the sea urchin kinesin-II, and mouse KIF3A/KIFB/KAP3 kinesin complexes. *DNA Res.* 7: 121-125.
4. Ali, M.Y., Siddiqui, Z.K., Malik, A.B. and Siddiqui, S.S. 2000. A novel C-terminal kinesin subfamily may be involved in chromosomal movement in *Caenorhabditis elegans*. *FEBS Lett.* 470: 70-76.
5. Ali, M.Y. and Siddiqui, S.S. 2000. cDNA cloning and expression of a C-terminus motor kinesin-like protein Klp-17, involved in chromosomal movement in *Caenorhabditis elegans*. *Biochem. Biophys. Res. Commun.* 267: 643-650.

## SOURCE

Klp3 (cN-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Klp3 of *C. elegans* 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-15645 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

Klp3 (cN-20) is recommended for detection of Klp3 of *Caenorhabditis elegans* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

## 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) 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.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.