

MKLP-1 (N-19): sc-867

BACKGROUND

The monoclonal antibody CHO1 detects a spindle antigen required for mitotic progression. Screening a HeLa cell cDNA expression library with this antibody has been shown to yield a cDNA predicted to encode a protein significantly related within its amino-terminal half to the motor ends of members of the kinesin superfamily. Since this similarity does not extend further, it has been suggested that the CHO1 antigen, now designated MKLP-1 (mitotic kinesin-like protein-1), represents a novel kinesin. Sequence analysis has also been shown to predict that MKLP-1 possesses features typical of nuclear proteins. Immunocytological studies have demonstrated that MKLP-1 moves from the nucleus early in mitosis and then to the midbody after cytokinesis. MKLP-1 has been shown to bundle antiparallel microtubules *in vitro* and to move them at rates comparable to spindle elongation *in vivo*. A hamster homolog of MKLP-1, designated CHO1 antigen, has also been isolated. Although apparently functionally equivalent with respect to microtubule bundling activity, there are significant differences between the human and hamster proteins at their C-termini, possibly due to alternative splicing or the presence of more than one MKLP-1 locus.

CHROMOSOMAL LOCATION

Genetic locus: KIF23 (human) mapping to 15q23; Kif23 (mouse) mapping to 9 B.

SOURCE

MKLP-1 (N-19) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the N-terminus of MKLP-1 of human origin.

PRODUCT

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

MKLP-1 (N-19) is available conjugated to agarose (sc-867 AC), 500 µg/0.25 ml agarose in 1 ml, for IP.

Blocking peptide available for competition studies, sc-867 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MKLP-1 (N-19) is recommended for detection of MKLP-1 of human and, to a lesser extent, mouse and rat 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), 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).

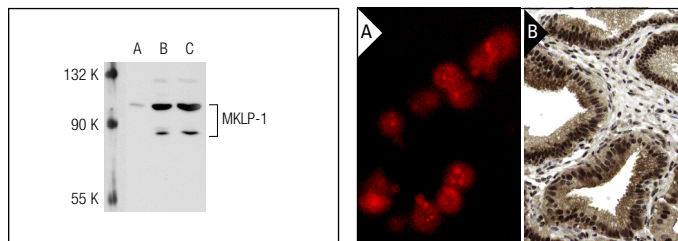
Suitable for use as control antibody for MKLP-1 siRNA (h): sc-35936, MKLP-1 siRNA (m): sc-37626, MKLP-1 shRNA Plasmid (h): sc-35936-SH, MKLP-1 shRNA Plasmid (m): sc-37626-SH, MKLP-1 shRNA (h) Lentiviral Particles: sc-35936-V and MKLP-1 shRNA (m) Lentiviral Particles: sc-37626-V.

Molecular Weight of MKLP-1: 110 kDa.

STORAGE

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

DATA



MKLP-1 (N-19): sc-867. Western blot analysis of MKLP-1 expression in non-transfected 293T: sc-117752 (A), human MKLP-1 transfected 293T: sc-113424 (B) and K-562 (C) whole cell lysates.

MKLP-1 (N-19): sc-867. Immunofluorescence staining of methanol-fixed K-562 cells showing nuclear staining (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing nuclear and cytoplasmic staining of glandular cells magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

SELECT PRODUCT CITATIONS

1. Neef, R., et al. 2003. Phosphorylation of mitotic kinesin-like protein 2 by polo-like kinase 1 is required for cytokinesis. *J. Cell Biol.* 162: 863-875.
2. Kanada, M., et al. 2009. Stabilization of anaphase midzone microtubules is regulated by Rho during cytokinesis in human fibrosarcoma cells. *Exp. Cell Res.* 315: 2705-2714.
3. Wolter, P., et al. 2012. GAS2L3, a novel target gene of the dream complex, is required for proper cytokinesis and genomic stability. *J. Cell Sci.* 125: 2393-2406.
4. Sheng, H., et al. 2012. Corticotropin-releasing hormone stimulates mitotic kinesin-like protein 1 expression via a PLC/PKC-dependent signaling pathway in hippocampal neurons. *Mol. Cell. Endocrinol.* 362: 157-164.
5. Hu, C.K., et al. 2012. Plk1 negatively regulates PRC1 to prevent premature midzone formation before cytokinesis. *Mol. Biol. Cell* 23: 2702-2711.
6. Choudhary, A., et al. 2013. Interphase cytofission maintains genomic integrity of human cells after failed cytokinesis. *Proc. Natl. Acad. Sci. USA* 110: 13026-13031.
7. Kreis, N.N., et al. 2014. p21^{Waf1/Cip1} deficiency causes multiple mitotic defects in tumor cells. *Oncogene* 33: 5716-5728.

RESEARCH USE

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



Try **MKLP-1 (C-12): sc-390113** or **MKLP-1 (24): sc-136473**, our highly recommended monoclonal alternatives to MKLP-1 (N-19). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **MKLP-1 (C-12): sc-390113**.