

# MKLP-1 (C-12): sc-390113



The Power to Question

## 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.

## SOURCE

MKLP-1 (C-12) is a mouse monoclonal antibody raised against amino acids 1-110 mapping at the N-terminus of MKLP-1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MKLP-1 (C-12) is available conjugated to agarose (sc-390113 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390113 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390113 PE), fluorescein (sc-390113 FITC), Alexa Fluor® 488 (sc-390113 AF488), Alexa Fluor® 546 (sc-390113 AF546), Alexa Fluor® 594 (sc-390113 AF594) or Alexa Fluor® 647 (sc-390113 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390113 AF680) or Alexa Fluor® 790 (sc-390113 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

MKLP-1 (C-12) is recommended for detection of MKLP-1 of human origin by Western Blotting (starting dilution 1:100, 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).

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

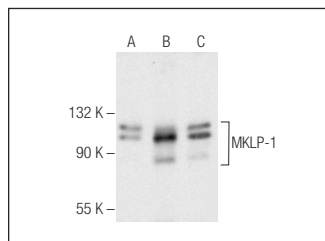
Molecular Weight of MKLP-1: 110 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203.

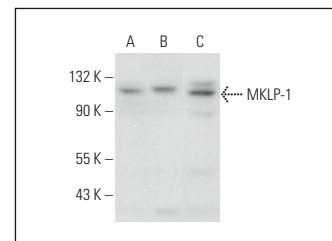
## STORAGE

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

## DATA



MKLP-1 (C-12): sc-390113. Western blot analysis of MKLP-1 expression in K-562 (A), HeLa (B) and Jurkat (C) whole cell lysates.



MKLP-1 (C-12): sc-390113. Western blot analysis of MKLP-1 expression in U-2 OS (A), U-251-MG (B) and AN3 CA (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Press, M.F., et al. 2019. Role for polo-like kinase 4 in mediation of cytokinesis. *Proc. Natl. Acad. Sci. USA* 116: 11309-11318.
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- Chow, S.E., et al. 2023. YAP co-localizes with the mitotic spindle and midbody to safeguard mitotic division in lung-cancer cells. *FEBS J.* 290: 5704-5719.
- Neahring, L., et al. 2023. Torques within and outside the human spindle balance twist at anaphase. *bioRxiv*. E-published.
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- Wu, Y., et al. 2024. SIRT7 promotes the proliferation and migration of anaplastic thyroid cancer cells by regulating the desuccinylation of KIF23. *BMC Cancer* 24: 210.
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## RESEARCH USE

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

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