

# MKP-1 (C-19): sc-370

## BACKGROUND

A key element in the pathway involved in the transduction of signals from activated protein-tyrosine kinase transmembrane receptors has been identified as the family of mitogen-activated protein kinases (MAP kinases). The most well known of these Ser/Thr kinases are ERK 1 and ERK 2. Mitogenic stimulation of cells triggers the activation of MAP kinases through phosphorylation of both tyrosyl (Y185) and threonyl (T183) residues. Phosphorylation of the T183 and Y185 ERK regulatory site is mediated by MAP kinase (MEK), which in turn is regulated by the proto-oncogene product Raf. Two highly related phosphatases, designated MKP-1 and MKP-2, exhibit 59% sequence identity at the amino acid level and oppose the action of MEK by downregulating the kinase activity of ERK 1 and ERK 2. MAP kinase phosphatase-1 and -2 proteins function by dephosphorylating ERK 1 and ERK 2 at their T-E-Y regulatory motif. An additional phosphatase encoded by the DUSP2 gene, designated PAC-1, also functions to downregulate ERK 1 and ERK 2 kinase activity. PAC-1 is a nuclear protein whose expression is strongly induced in response to mitogen.

## CHROMOSOMAL LOCATION

Genetic locus: DUSP1 (human) mapping to 5q35.1; Dusp1 (mouse) mapping to 17 A3.3.

## SOURCE

MKP-1 (C-19) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of MKP-1 of human origin.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-370 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

MKP-1 (C-19) is recommended for detection of MKP-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MKP-1 siRNA (h): sc-35937, MKP-1 siRNA (m): sc-35938, MKP-1 shRNA Plasmid (h): sc-35937-SH, MKP-1 shRNA Plasmid (m): sc-35938-SH, MKP-1 shRNA (h) Lentiviral Particles: sc-35937-V and MKP-1 shRNA (m) Lentiviral Particles: sc-35938-V.

Molecular Weight of MKP-1: 40 kDa.

Positive Controls: SW480 cell lysate: sc-2219, HeLa whole cell lysate: sc-2200 or A-431 whole cell lysate: sc-2201.

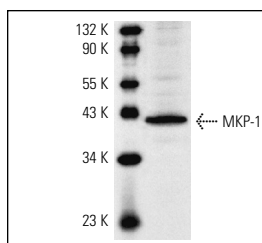
## STORAGE

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

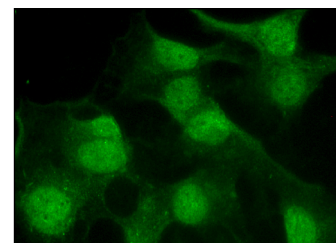
## RESEARCH USE

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

## DATA



MKP-1 (C-19): sc-370. Western blot analysis of MKP-1 expression in HeLa whole cell lysate.



MKP-1 (C-19): sc-370. Immunofluorescence staining of methanol-fixed Hep G2 cells showing nuclear and cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Loda, M., et al. 1996. Expression of mitogen-activated protein kinase phosphatase-1 in the early phases of human epithelial carcinogenesis. *Am. J. Pathol.* 149: 1553-1564.
- Yaniv, S.P., et al. 2010. Dexamethasone enhances the norepinephrine-induced ERK/MAPK intracellular pathway possibly via dysregulation of the  $\alpha_2$ -adrenergic receptor: implications for antidepressant drug mechanism of action. *Eur. J. Cell Biol.* 89: 712-722.
- Leitao, B., et al. 2010. Silencing of the JNK pathway maintains progesterone receptor activity in decidualizing human endometrial stromal cells exposed to oxidative stress signals. *FASEB J.* 24: 1541-1551.
- Tokarska-Schlattner, M., et al. 2010. Early effects of doxorubicin in perfused heart: transcriptional profiling reveals inhibition of cellular stress response genes. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 298: R1075-R1088.
- Elyada, E., et al. 2011. CK1 $\alpha$  ablation highlights a critical role for p53 in invasiveness control. *Nature* 470: 409-413.
- Lee, W.H., et al. 2011. Casein kinase 2 regulates the mRNA-destabilizing activity of tristetraprolin. *J. Biol. Chem.* 286: 21577-21587.
- Casar, B., et al. 2012. Mxi2 sustains ERK1/2 phosphorylation in the nucleus by preventing ERK1/2 binding to phosphatases. *Biochem. J.* 441: 571-578.
- Pervin, S., et al. 2013. Oxidative stress specifically downregulates survivin to promote breast tumour formation. *Br. J. Cancer* 108: 848-858.

**MONOS**  
Satisfaction  
Guaranteed

Try **MKP-1 (D-3): sc-271684** or **MKP-1 (E-6): sc-373841**, our highly recommended monoclonal alternatives to MKP-1 (C-19). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **MKP-1 (D-3): sc-271684**.