

# MKP-2 (S-18): sc-1200

## BACKGROUND

MKP-2 (MAP kinase phosphatase 2, Dual specificity protein phosphatase 4 (DUSP4)) is a phosphatase involved in the complex MAPKKK cascade. MKP-2 belongs to the protein-tyrosine phosphatase family (Non-receptor class dual specificity subfamily) and contains one rhodanese domain and one tyrosine-protein phosphatase domain. A dual specificity protein phosphatase, MKP-2 has a stringent substrate specificity for MAPKs. It acts to regulate mitogenic signal transduction by dephosphorylating both Thr and Tyr residues on MAP kinases ERK 1 and ERK 2. Transcription factor E2F-1, which is responsible for mediating apoptosis and suppressing tumorigenesis, acts as a transcriptional regulator of MKP-2. E2F-1 is physically associated with the MKP-2 promoter and can transactivate the promoter of the MKP-2 gene. Specifically, E2F-1 binds to a perfect palindromic motif in the MKP-2 promoter. MKP-2 is an essential cell death mediator in the E2F-1 pathway and may lead to the development of new strategies for cancer treatment.

## CHROMOSOMAL LOCATION

Genetic locus: DUSP4 (human) mapping to 8p12; Dusp4 (mouse) mapping to 8 A4.

## SOURCE

MKP-2 (S-18) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of MKP-2 of mouse 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-1200 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

MKP-2 (S-18) is recommended for detection of MKP-2 of mouse, rat and human 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).

MKP-2 (S-18) is also recommended for detection of MKP-2 in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for MKP-2 siRNA (h): sc-38998, MKP-2 siRNA (m): sc-38999, MKP-2 shRNA Plasmid (h): sc-38998-SH, MKP-2 shRNA Plasmid (m): sc-38999-SH, MKP-2 shRNA (h) Lentiviral Particles: sc-38998-V and MKP-2 shRNA (m) Lentiviral Particles: sc-38999-V.

Molecular Weight of MKP-2: 43 kDa.

Positive Controls: HeLa + UV irradiated cell lysate: sc-2221, RAW 264.7 whole cell lysate: sc-2211 or SK-BR-3 + PMA cell lysate: sc-24773.

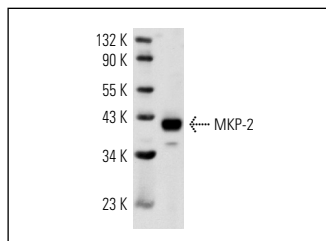
## RESEARCH USE

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

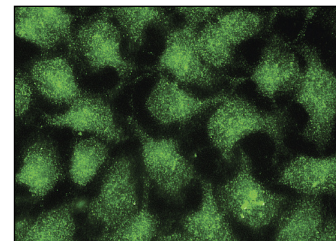
## STORAGE

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

## DATA



MKP-2 (S-18): sc-1200. Western blot analysis of MKP-2 expression in PMA-induced RAW 264.7 whole cell lysate.



MKP-2 (S-18): sc-1200. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- De Cesaris, P., et al. 1999. Activation of Jun N-terminal kinase/stress-activated protein kinase pathway by tumor necrosis factor  $\alpha$  leads to intercellular adhesion molecule-1 expression. *J. Biol. Chem.* 274: 28978-28982.
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- Sloss, C.M., et al. 2005. Disruption of two putative nuclear localization sequences is required for cytosolic localization of mitogen-activated protein kinase phosphatase-2. *Cell. Signal.* 17: 709-716.
- Berasi, S.P., et al. 2006. Inhibition of gluconeogenesis through transcriptional activation of Egr-1 and DUSP4 by AMP-activated kinase. *J. Biol. Chem.* 281: 27167-27177.
- Tresini, M., et al. 2007. Modulation of replicative senescence of diploid human cells by nuclear ERK signaling. *J. Biol. Chem.* 282: 4136-4151.
- Campbell, P.M., et al. 2008. Ras-driven transformation of human nestin-positive pancreatic epithelial cells. *Methods Enzymol.* 439: 451-465.
- Smirnova, I.S., et al. 2010. Prosurvival and proapoptotic functions of ERK1/2 activation in murine thymocytes *in vitro*. *Cell. Immunol.* 261: 29-36.



Try **MKP-2 (F-10): sc-17821** or **MKP-2 (48): sc-135991**, our highly recommended monoclonal alternatives to MKP-2 (S-18).