SANTA CRUZ BIOTECHNOLOGY, INC.

MKP-2 (H-67): sc-10797

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

MKP-2 (MAP kinase phosphatase 2, dual specificity protein phosphatase 4 (DUSP4)) is a phoshpatase 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.

REFERENCES

1. Shen, W.H., et al. 2006. Mitogen-activated protein kinase phosphatase 2: a novel transcription target of p53 in apoptosis. Cancer Res. 66: 6033-6039.
2. Zhou, B., et al. 2006. Mapping ERK2-MKP3 binding interfaces by hydrogen/deuterium exchange mass spectrometry. J. Biol. Chem. 281: 38834-38844.

CHROMOSOMAL LOCATION

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

SOURCE

MKP-2 (H-67) is a rabbit polyclonal antibody raised against amino acids 78-144 of MKP-2 (MAP kinase phosphatase-2) 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.

APPLICATIONS

MKP-2 (H-67) 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 (H-67) is also recommended for detection of MKP-2 in additional species, including equine, canine, bovine and porcine.

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.

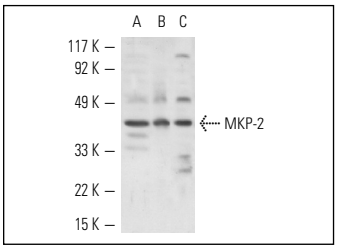
Molecular Weight of MKP-2: 43 kDa.

Positive Controls: Jurkat + PMA cell lysate: sc-24718.

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 (H-67): sc-10797. Western blot analysis of MKP-2 expression in PMA-induced SK-BR-3 (**A**), RAW 264.7 (**B**) and PMA-induced Jurkat (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Nakano, S., et al. 2003. MAP kinase phosphatase-1 is induced in abnormal fibers in inclusion body myositis. Neurology 61: 322-326.
2. Sakai, A., et al. 2004. Glucocorticoids synergize with IL-1β to induce TLR2 expression via MAP kinase phosphatase-1-dependent dual Inhibition of MAPK JNK and p38 in epithelial cells. BMC Mol. Biol. 5: 2.
3. Olson, A.K., et al. 2005. Mitogen-activated protein kinase activation and regulation in the pressure-loaded fetal ovine heart. Am. J. Physiol. Heart Circ. Physiol. 290: H1587-H1595.
4. Modesti, P.A., et al. 2008. Impaired angiotensin II-extracellular signal-regulated kinase signaling in failing human ventricular myocytes. J. Hypertens. 26: 2030-2039.
5. González-Fernández, L., et al. 2009. Identification of protein tyrosine phosphatases and dual-specificity phosphatases in mammalian spermatozoa and their role in sperm motility and protein tyrosine phosphorylation. Biol. Reprod. 80: 1239-1252.
6. Budziszewska, B., et al. 2010. The decrease in JNK- and p38-MAP kinase activity is accompanied by the enhancement of PP2A phosphate level in the brain of prenatally stressed rats. J. Physiol. Pharmacol. 61: 207-215.
7. Teutschbein, J., et al. 2010. Gene expression analysis after receptor tyrosine kinase activation reveals new potential melanoma proteins. BMC Cancer 10: 386.

RESEARCH USE

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

MONOS Satisfaction Guaranteed

Try **MKP-2 (F-10): sc-17821** or **MKP-2 (48): sc-135991**, our highly recommended monoclonal alternatives to MKP-2 (H-67).