

# p-MEK-1 (B-4): sc-271914

## BACKGROUND

A family of protein kinases located upstream of the MAP kinases and responsible for their activation has been identified. The prototype member of this family, designated MAP kinase kinase, or MEK-1, specifically phosphorylates the MAP kinase regulatory threonine and tyrosine residues present in the Thr-Glu-Tyr motif of ERK. A second MEK family member, MEK-2, resembles MEK-1 in its substrate specificity. MEK-3 (or MKK-3) functions to activate p38 MAP kinase, and MEK-4 (also called SEK1 or MKK-4) activates both p38 and JNK MAP kinases. MEK-5 appears to specifically phosphorylate ERK5, whereas MEK-6 phosphorylates p38 and p38 $\beta$ . MEK-7 (or MKK-7) phosphorylates and activates the JNK signal transduction pathway. Phosphorylation on Ser/Thr by MAP kinase kinase kinases (RAFor MEK1) positively regulates the kinase activity.

## CHROMOSOMAL LOCATION

Genetic locus: MAP2K1 (human) mapping to 15q22.31; Map2k1 (mouse) mapping to 9 C.

## SOURCE

p-MEK-1 (B-4) is a mouse monoclonal antibody raised against a short amino acid sequence containing phosphorylated MEK1 of human origin.

## PRODUCT

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

p-MEK-1 (B-4) is available conjugated to agarose (sc-271914 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271914 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271914 PE), fluorescein (sc-271914 FITC), Alexa Fluor<sup>®</sup> 488 (sc-271914 AF488), Alexa Fluor<sup>®</sup> 546 (sc-271914 AF546), Alexa Fluor<sup>®</sup> 594 (sc-271914 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-271914 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-271914 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-271914 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271914 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA

## APPLICATIONS

p-MEK-1 (B-4) is recommended for detection of Ser 298 phosphorylated MEK1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

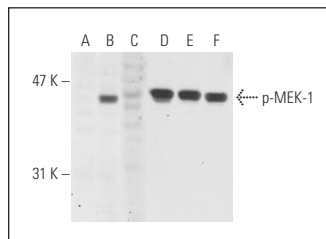
Suitable for use as control antibody for MEK-1 siRNA (h): sc-29396, MEK-1 siRNA (m): sc-35904, MEK-1 shRNA Plasmid (h): sc-29396-SH, MEK-1 shRNA Plasmid (m): sc-35904-SH, MEK-1 shRNA (h) Lentiviral Particles: sc-29396-V and MEK-1 shRNA (m) Lentiviral Particles: sc-35904-V.

Molecular Weight of p-MEK-1: 45 kDa.

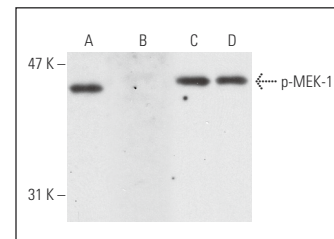
## STORAGE

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

## DATA



Western blot analysis of MEK-1 phosphorylation in untreated (A, D), EGF treated (B, E) and EGF and lambda protein phosphatase (sc-200312A) treated (C, F) HeLa whole cell lysates. Antibodies tested include p-MEK-1 (B-4): sc-271914 (A, B, C) and MEK-1 (C-18): sc-219 (D, E, F).



Western blot analysis of MEK-1 phosphorylation in untreated (A, C) and EGF treated (B, D) A-431 whole cell lysates. Antibodies tested include p-MEK-1 (B-4): sc-271914 (A, B) and MEK-1 (C-18): sc-219 (C, D).

## SELECT PRODUCT CITATIONS

- Fong, Y.C., et al. 2012. CCN6 enhances ICAM-1 expression and cell motility in human chondrosarcoma cells. *J. Cell. Physiol.* 227: 223-232.
- Wang, Z., et al. 2014. Tissue kallikrein protects rat hippocampal CA1 neurons against cerebral ischemia/reperfusion-induced injury through the B2R-Raf-MEK1/2-ERK1/2 pathway. *J. Neurosci. Res.* 92: 651-657.
- Yu, Y., et al. 2015. Celastrol inhibits inflammatory stimuli-induced neutrophil extracellular trap formation. *Curr. Mol. Med.* 15: 401-410.
- Yang, K., et al. 2016. CTGF enhances resistance to 5-FU-mediated cell apoptosis through FAK/MEK/ERK signal pathway in colorectal cancer. *Onco Targets Ther.* 9: 7285-7295.
- Ju, H., et al. 2017. Impact of environmental pollutant cadmium on the establishment of a cancer stem cell population in breast and hepatic cancer. *ACS Omega* 2: 563-572.
- Ullah, M., et al. 2020. Pulsed focused ultrasound enhances the therapeutic effect of mesenchymal stromal cell-derived extracellular vesicles in acute kidney injury. *Stem Cell Res. Ther.* 11: 398.
- Huang, C.C., et al. 2021. Adiponectin promotes VEGF expression in rheumatoid arthritis synovial fibroblasts and induces endothelial progenitor cell angiogenesis by inhibiting miR-106a-5p. *Cells* 10: 2627.
- Liu, D., et al. 2022. Both *in situ* and circulating SLC3A2 could be used as prognostic markers for human lung squamous cell carcinoma and lung adenocarcinoma. *Cancers* 14: 5191.
- Zhang, Y., et al. 2023. Guanxinling tablets improve myocardial hypertrophy by inhibiting the activation of MEK-ERK1/2 signaling pathway. *J. Appl. Biomed.* 21: 137-149.

## RESEARCH USE

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