

MAP2K1 Antibody / Mitogen-activated protein kinase kinase 1 (FY12634)

Catalog No.	Formulation	Size
FY12634	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q02750
Applications	ELISA: 0.1-0.5ug/ml Flow Cytometry: 1-3ug/million cells Immunofluorescence: 5ug/ml Immunohistochemistry: 2-5ug/ml Immunocytochemistry: 5ug/ml Western Blot: 0.25-0.5ug/ml
Limitations	This MAP2K1 antibody is available for research use only.

Description

MAP2K1 antibody detects Mitogen-activated protein kinase kinase 1, a dual-specificity protein kinase that functions as a central component of the MAPK/ERK signaling pathway. MAP2K1, also known as MEK1, phosphorylates and activates ERK1 and ERK2, controlling key cellular processes including proliferation, differentiation, and survival. The MAP2K1 antibody is widely used in signal transduction, oncology, and developmental biology to study MAPK pathway activation and kinase regulation.

MAP2K1 is encoded by the MAP2K1 gene located on human chromosome 15q22.31. The protein is approximately 393 amino acids in length and consists of an N-terminal regulatory region and a C-terminal kinase domain. MAP2K1 belongs to the family of dual-specificity kinases, capable of phosphorylating both threonine and tyrosine residues on its substrates. Activation occurs through phosphorylation by RAF kinases in response to growth factors, hormones, or stress stimuli.

The MAP2K1 antibody detects a 45 kilodalton protein by western blot and reveals cytoplasmic and nuclear localization

under immunofluorescence microscopy. In resting cells, MAP2K1 is inactive; upon stimulation of RAS-RAF signaling, it becomes phosphorylated at serine residues 218 and 222, enabling catalytic activation of ERK kinases. This cascade transmits extracellular signals to transcription factors, leading to gene expression changes that drive cell proliferation and differentiation.

Aberrant MAP2K1 activation is implicated in numerous cancers, including melanoma, colorectal, and lung carcinoma, due to constitutive activation of the MAPK pathway. Mutations that enhance MAP2K1 activity or confer resistance to RAF inhibitors are clinically significant in targeted cancer therapy. Beyond oncology, MAP2K1 contributes to cardiac hypertrophy, immune signaling, and neural plasticity.

Because of its central role in MAPK pathway regulation, MAP2K1 serves as a key target for understanding cell signaling and therapeutic intervention. NSJ Bioreagents provides a validated MAP2K1 antibody optimized for western blot, immunofluorescence, and kinase pathway studies, supporting research into ERK activation, signal integration, and targeted drug development.

Application Notes

Optimal dilution of the MAP2K1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human MEK1/MAP2K1 recombinant protein (Position: M1-V393) was used as the immunogen for the MAP2K1 antibody.

Storage

After reconstitution, the MAP2K1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.