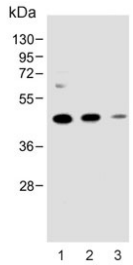
MAP2K1 Antibody / MEK1 (F54728)

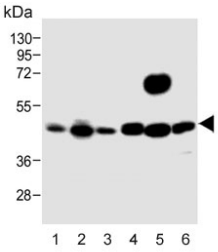
Catalog No.	Formulation	Size
F54728-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F54728-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

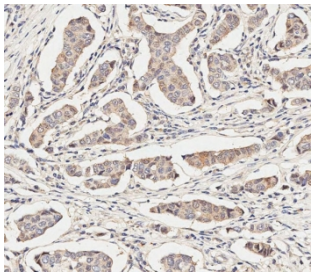
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity purified
UniProt	Q02750
Localization	Cytoplasmic, nuclear
Applications	Immunohistochemistry (FFPE): 1:25 Western blot: 1:500-1:2000
Limitations	This MAP2K1 antibody is available for research use only.



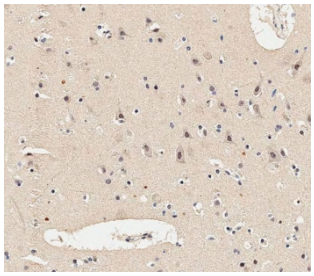
Western blot testing of 1) human MDA-MB-231, 2) mouse NIH 3T3 and 3) rat C6 cell lysate with MAP2K1 antibody. Predicted molecular weight ~43 kDa.



Western blot testing of 1) human A431, 2) human HeLa, 3) human Jurkat, 4) mouse NIH 3T3, 4) mouse spleen and 6) rat C6 cell lysate with MAP2K1 antibody. Predicted molecular weight ~43 kDa.



IHC testing of FFPE human breast cancer tissue with MAP2K1 antibody. HIER: steam section in pH9 EDTA for 20 min and allow to cool prior to staining.



IHC testing of FFPE human brain tissue with MAP2K1 antibody. HIER: steam section in pH9 EDTA for 20 min and allow to cool prior to staining.

Description

MAP2K1 Antibody / MEK1 recognizes mitogen-activated protein kinase kinase 1 (MAP2K1), more commonly known as MEK1, a dual-specificity protein kinase that serves as a central regulator of the RAF-MEK-ERK signaling cascade. Activated by RAF family kinases in response to growth factors, cytokines, and extracellular stimuli, MAP2K1 phosphorylates ERK1 and ERK2 to regulate cell proliferation, differentiation, survival, migration, and gene expression. Because MAP2K1 occupies a pivotal position within one of the most extensively studied intracellular signaling pathways, MAP2K1 Antibody / MEK1 is widely used to investigate cell signaling, developmental biology, oncology, and targeted therapeutic responses.

MAP2K1 belongs to the mitogen-activated protein kinase kinase family and exhibits remarkable substrate specificity, primarily phosphorylating ERK1 and ERK2 on both threonine and tyrosine residues required for their activation. Activated ERK proteins subsequently regulate numerous cytoplasmic and nuclear substrates involved in cell cycle progression, apoptosis, metabolism, cytoskeletal organization, and transcriptional control. Through these signaling events, MAP2K1 functions as a critical molecular switch that integrates extracellular signals with coordinated cellular responses required for tissue homeostasis and normal development.

Beyond regulating cell growth, MAP2K1 participates in angiogenesis, immune responses, neuronal development, stem cell maintenance, wound healing, and cellular adaptation to environmental stress. Because it acts immediately downstream of RAS and RAF proteins, MAP2K1 serves as a major signaling hub within the MAPK pathway, coordinating diverse biological processes across numerous tissues. Tight regulation of MEK1 activity is essential for maintaining normal physiology, while sustained activation promotes abnormal proliferation and disease progression.

Mutations affecting MAP2K1 and constitutive activation of the RAF-MEK-ERK pathway have been implicated in many human cancers as well as developmental disorders and inflammatory diseases. Consequently, MEK1 has become an important therapeutic target, with several clinically approved MEK inhibitors now used to treat cancers driven by aberrant MAPK signaling. NSJ Bioreagents' MAP2K1 Antibody / MEK1 supports investigations into MAPK signaling, ERK activation, cell proliferation, differentiation, oncogenic signaling, developmental biology, pharmacology, and targeted cancer therapeutics. Reliable detection of MAP2K1 enables researchers to study one of the central signaling kinases controlling cellular growth and environmental responses.

Learn more about the biological functions, applications, and validated products on our MEK1 Antibody / MAP Kinase Kinase Antibody page.

Application Notes

The stated application concentrations are suggested starting points. Titration of the MAP2K1 antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A portion of amino acids 200-227 from the human protein was used as the immunogen for the MAP2K1 antibody.

Storage

Aliquot the MAP2K1 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

MAP2K1 antibody, MEK1 antibody, Mitogen-Activated Protein Kinase Kinase 1 antibody, MAPKK1 antibody, MKK1 antibody, ERK Activating Kinase antibody

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