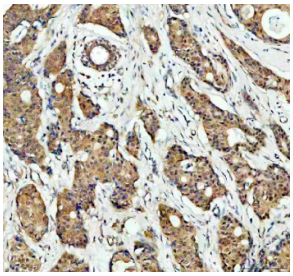
MAPK14 Antibody / Mitogen-activated protein kinase 14 / p38 alpha (FY12762)

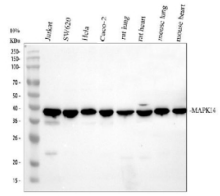
Catalog No.	Formulation	Size
FY12762	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

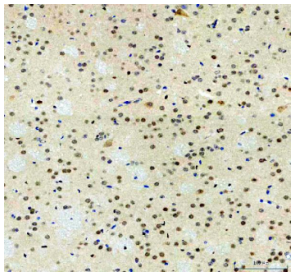
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q16539
Localization	Cytoplasmic, Nuclear
Applications	Flow Cytometry : 1-3ug/million cells Immunoprecipitation : 2-4ug/500ug of lysate Immunohistochemistry : 2-5ug/ml Western Blot : 0.25-0.5ug/ml
Limitations	This MAPK14 antibody is available for research use only.



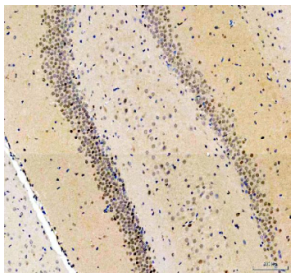
Immunohistochemical staining of MAPK14 using anti- MAPK14 antibody. MAPK14 was detected in a paraffin-embedded section of human breast cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti- MAPK14 antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



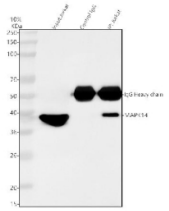
Western blot analysis of MAPK14 using anti- MAPK14 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Jurkat whole cell lysates, Lane 2: human SW620 whole cell lysates, Lane 3: human Hela whole cell lysates, Lane 4: human CACO-2 whole cell lysates, Lane 5: rat lung tissue lysates, Lane 6: rat heart tissue lysates, Lane 7: mouse lung tissue lysates, Lane 8: mouse heart tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti- MAPK14 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an ECL Plus Western Blotting Substratewith Tanon 5200 system. A major band is detected at ~38 kDa, consistent with the active phosphorylated form of MAPK14 (predicted ~41 kDa), with a weaker lower band near 36 kDa corresponding to dephosphorylated or partially processed species.



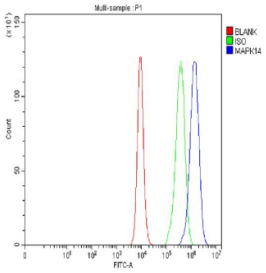
Immunohistochemical staining of MAPK14 using anti- MAPK14 antibody. MAPK14 was detected in a paraffin-embedded section of mouse brain tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti- MAPK14 antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



Immunohistochemical staining of MAPK14 using anti- MAPK14 antibody. MAPK14 was detected in a paraffin-embedded section of rat brain tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti- MAPK14 antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



Immunoprecipitating MAPK14 in Jurkat whole cell lysate. Western blot analysis of MAPK14 using anti- MAPK14 antibody; Lane 1: Jurkat whole cell lysates (30ug); Lane 2: Rabbit control IgG instead of anti- MAPK14 antibody in Jurkat whole cell lysate; Lane 3: anti- MAPK14 antibody (2ug) + Jurkat whole cell lysate (500ug). After electrophoresis, proteins were transferred to a membrane. Then the membrane was incubated with rabbit anti- MAPK14 antibody at a dilution of 0.5 ug/ml and probed with a goat anti-rabbit IgG-HRP secondary antibody. The signal is developed using ECL Plus Western Blotting Substrate. A major band is detected at ~38 kDa, consistent with the active phosphorylated form of MAPK14 (predicted ~41 kDa), with a possible weaker lower band near 36 kDa corresponding to dephosphorylated or partially processed species.



Flow Cytometry analysis of CACO-2 cells using anti- MAPK14 antibody. Overlay histogram showing CACO-2 cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti- MAPK14 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.

Description

MAPK14 antibody detects Mitogen-activated protein kinase 14 (also known as p38 alpha), a serine/threonine kinase that plays a pivotal role in cellular responses to stress stimuli and proinflammatory cytokines. Encoded by the MAPK14 gene on chromosome 6p21.31, this kinase is part of the MAP kinase family, which transduces extracellular signals into transcriptional and post-translational responses controlling cell proliferation, differentiation, and survival. p38 alpha is activated by environmental stressors such as UV irradiation, heat shock, osmotic stress, and inflammatory signals, leading to the phosphorylation of numerous substrates that regulate gene expression and apoptosis.

MAPK14 is activated by upstream kinases MKK3 and MKK6 through dual phosphorylation of the conserved threonine-glycine-tyrosine (TGY) motif in its activation loop. Once activated, p38 alpha phosphorylates a wide array of targets including transcription factors (ATF2, MEF2C, ELK1), kinases (MAPKAPK2/3), and cell-cycle regulators, influencing inflammatory cytokine production, cell differentiation, and immune activation. It also regulates mRNA stability through the phosphorylation of RNA-binding proteins. In immune cells, p38 alpha drives the production of interleukin-6 and tumor necrosis factor-alpha, linking it to inflammatory diseases and autoimmune pathogenesis.

The MAPK14 antibody is widely used in molecular biology, inflammation, and cancer research to assess kinase expression, activation, and signal transduction. Western blot analysis typically identifies a 43 kilodalton band corresponding to MAPK14, while immunofluorescence and immunohistochemistry reveal cytoplasmic and nuclear staining depending on activation state. This antibody allows for monitoring of stress kinase activation and signaling pathway dynamics in diverse cell types.

MAPK14 is also implicated in tumor biology, as it influences cell migration, angiogenesis, and resistance to chemotherapy. Its inhibition has therapeutic potential in cancer, arthritis, and neuroinflammation. The MAPK14 antibody provides a reliable tool for studying stress-activated kinase pathways, cytokine regulation, and drug mechanism of action. NSJ Bioreagents supplies this antibody validated for its application to ensure consistent and specific detection in research applications.

Application Notes

Optimal dilution of the MAPK14 antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of human p38 alpha/MAPK14 was used as the immunogen for the MAPK14 antibody.

Storage

After reconstitution, the MAPK14 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.