

# MAPK12 Antibody - C-terminal region

**Rabbit Polyclonal Antibody Catalog # Al16060** 

## **Specification**

# MAPK12 Antibody - C-terminal region - Product Information

**WB** Application **Primary Accession** P53778

Other Accession NM 002969, NP 002960

Reactivity Human, Mouse, Rat, Rabbit, Guinea Pig Predicted Human, Mouse, Rat, Rabbit, Pig, Guinea

> Pig **Rabbit Polyclonal**

Host Clonality Calculated MW 40kDa KDa

## MAPK12 Antibody - C-terminal region - Additional Information

**Gene ID 6300** 

Alias Symbol MAPK12, ERK6, SAPK3,

**Other Names** 

Mitogen-activated protein kinase 12, MAP kinase 12, MAPK 12, 2.7.11.24, Extracellular signal-regulated kinase 6, ERK-6, Mitogen-activated protein kinase p38 gamma, MAP kinase p38 gamma, Stress-activated protein kinase 3, MAPK12, ERK6, SAPK3

#### **Format**

Liquid. Purified antibody supplied in 1x PBS buffer with 0.09% (w/v) sodium azide and 2% sucrose.

### **Reconstitution & Storage**

Add 50 &mu, I of distilled water. Final Anti-MAPK12 antibody concentration is 1 mg/ml in PBS buffer with 2% sucrose. For longer periods of storage, store at -20°C. Avoid repeat freeze-thaw cycles.

### **Precautions**

MAPK12 Antibody - C-terminal region is for research use only and not for use in diagnostic or therapeutic procedures.

### MAPK12 Antibody - C-terminal region - Protein Information

Name MAPK12

Synonyms ERK6, SAPK3

# **Function**

Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway. MAPK12 is one of the four p38 MAPKs which play an important role in the cascades of cellular responses evoked by extracellular stimuli such as pro-inflammatory cytokines



or physical stress leading to direct activation of transcription factors such as ELK1 and ATF2. Accordingly, p38 MAPKs phosphorylate a broad range of proteins and it has been estimated that they may have approximately 200 to 300 substrates each. Some of the targets are downstream kinases such as MAPKAPK2, which are activated through phosphorylation and further phosphorylate additional targets. Plays a role in myoblast differentiation and also in the downregulation of cyclin D1 in response to hypoxia in adrenal cells suggesting MAPK12 may inhibit cell proliferation while promoting differentiation. Phosphorylates DLG1. Following osmotic shock, MAPK12 in the cell nucleus increases its association with nuclear DLG1, thereby causing dissociation of DLG1-SFPQ complexes. This function is independent of its catalytic activity and could affect mRNA processing and/or gene transcription to aid cell adaptation to osmolarity changes in the environment. Regulates UV-induced checkpoint signaling and repair of UV-induced DNA damage and G2 arrest after gamma-radiation exposure. MAPK12 is involved in the regulation of SLC2A1 expression and basal glucose uptake in L6 myotubes; and negatively regulates SLC2A4 expression and contraction-mediated glucose uptake in adult skeletal muscle. C-Jun (JUN) phosphorylation is stimulated by MAPK14 and inhibited by MAPK12, leading to a distinct AP-1 regulation. MAPK12 is required for the normal kinetochore localization of PLK1, prevents chromosomal instability and supports mitotic cell viability. MAPK12- signaling is also positively regulating the expansion of transient amplifying myogenic precursor cells during muscle growth and regeneration.

### **Cellular Location**

Cytoplasm. Nucleus. Mitochondrion. Note=Mitochondrial when associated with SH3BP5. In skeletal muscle colocalizes with SNTA1 at the neuromuscular junction and throughout the sarcolemma (By similarity).

#### **Tissue Location**

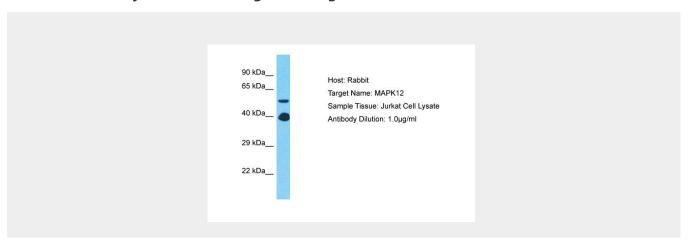
Highly expressed in skeletal muscle and heart.

## MAPK12 Antibody - C-terminal region - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- <u>Immunoprecipitation</u>
- Flow Cytomety
- Cell Culture

## MAPK12 Antibody - C-terminal region - Images





Tel: 858.875.1900 Fax: 858.875.1999

Host: Rabbit

Target Name: MAPK12

Sample Tissue: Jurkat Whole Cell lysates

Antibody Dilution: 1.0µg/ml

# MAPK12 Antibody - C-terminal region - Background

Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway. MAPK12 is one of the four p38 MAPKs which play an important role in the cascades of cellular responses evoked by extracellular stimuli such as proinflammatory cytokines or physical stress leading to direct activation of transcription factors such as ELK1 and ATF2. Accordingly, p38 MAPKs phosphorylate a broad range of proteins and it has been estimated that they may have approximately 200 to 300 substrates each. Some of the targets are downstream kinases such as MAPKAPK2, which are activated through phosphorylation and further phosphorylate additional targets. Plays a role in myoblast differentiation and also in the down-regulation of cyclin D1 in response to hypoxia in adrenal cells suggesting MAPK12 may inhibit cell proliferation while promoting differentiation. Phosphorylates DLG1. Following osmotic shock, MAPK12 in the cell nucleus increases its association with nuclear DLG1, thereby causing dissociation of DLG1-SFPQ complexes. This function is independent of its catalytic activity and could affect mRNA processing and/or gene transcription to aid cell adaptation to osmolarity changes in the environment. Regulates UV-induced checkpoint signaling and repair of UV-induced DNA damage and G2 arrest after gamma-radiation exposure. MAPK12 is involved in the regulation of SLC2A1 expression and basal glucose uptake in L6 myotubes; and negatively regulates SLC2A4 expression and contraction-mediated glucose uptake in adult skeletal muscle. C-Jun (JUN) phosphorylation is stimulated by MAPK14 and inhibited by MAPK12, leading to a distinct AP-1 regulation. MAPK12 is required for the normal kinetochore localization of PLK1, prevents chromosomal instability and supports mitotic cell viability. MAPK12-signaling is also positively regulating the expansion of transient amplifying myogenic precursor cells during muscle growth and regeneration.

# MAPK12 Antibody - C-terminal region - References

Lechner C., et al. Proc. Natl. Acad. Sci. U.S.A. 93:4355-4359(1996). Goedert M., et al. Genomics 41:501-502(1997). Li Z., et al. Biochem. Biophys. Res. Commun. 228:334-340(1996). Collins J.E., et al. Genome Biol. 5:R84.1-R84.11(2004). Dunham I..et al. Nature 402:489-495(1999).