

## MAPKAPK2 / MAPKAP Kinase 2 Antibody (aa300-350)

Rabbit Polyclonal Antibody Catalog # ALS16919

## **Specification**

# MAPKAPK2 / MAPKAP Kinase 2 Antibody (aa300-350) - Product Information

Application IHC, WB
Primary Accession P49137
Other Accession 9261

Reactivity Human, Mouse, Rat

Host Rabbit
Clonality Polyclonal
Calculated MW 45568

# MAPKAPK2 / MAPKAP Kinase 2 Antibody (aa300-350) - Additional Information

#### **Gene ID 9261**

#### **Other Names**

MAPKAPK2, MK-2, MAP KAP Kinase 2, MAPKAP kinase 2, MK2, MAPKAP-K2, MAPKAPK-2

#### Target/Specificity

Human MK2 / MAPKAPK2

### **Reconstitution & Storage**

PBS, pH 7.2, 15 mM sodium azide. Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze-thaw cycles.

#### **Precautions**

MAPKAPK2 / MAPKAP Kinase 2 Antibody (aa300-350) is for research use only and not for use in diagnostic or therapeutic procedures.

## MAPKAPK2 / MAPKAP Kinase 2 Antibody (aa300-350) - Protein Information

#### Name MAPKAPK2

## **Function**

Stress-activated serine/threonine-protein kinase involved in cytokine production, endocytosis, reorganization of the cytoskeleton, cell migration, cell cycle control, chromatin remodeling, DNA damage response and transcriptional regulation. Following stress, it is phosphorylated and activated by MAP kinase p38-alpha/MAPK14, leading to phosphorylation of substrates. Phosphorylates serine in the peptide sequence, Hyd-X-R-X(2)-S, where Hyd is a large hydrophobic residue. Phosphorylates ALOX5, CDC25B, CDC25C, CEP131, ELAVL1, HNRNPA0, HSP27/HSPB1, KRT18, KRT20, LIMK1, LSP1, PABPC1, PARN, PDE4A, RCSD1, RPS6KA3, TAB3 and TTP/ZFP36. Phosphorylates HSF1; leading to the interaction with HSP90 proteins and inhibiting HSF1 homotrimerization, DNA-binding and transactivation activities (PubMed:<a href="http://www.uniprot.org/citations/16278218" target="\_blank">16278218</a>/a>). Mediates phosphorylation of HSP27/HSPB1 in response to stress, leading to the dissociation of HSP27/HSPB1





from large small heat-shock protein (sHsps) oligomers and impairment of their chaperone activities and ability to protect against oxidative stress effectively. Involved in inflammatory response by regulating tumor necrosis factor (TNF) and IL6 production post-transcriptionally: acts by phosphorylating AU-rich elements (AREs)-binding proteins ELAVL1, HNRNPA0, PABPC1 and TTP/ZFP36, leading to the regulation of the stability and translation of TNF and IL6 mRNAs. Phosphorylation of TTP/ZFP36, a major post-transcriptional regulator of TNF, promotes its binding to 14-3-3 proteins and reduces its ARE mRNA affinity, leading to inhibition of dependent degradation of ARE-containing transcripts. Phosphorylates CEP131 in response to cellular stress induced by ultraviolet irradiation which promotes binding of CEP131 to 14-3-3 proteins and inhibits formation of novel centriolar satellites (PubMed:<a

href="http://www.uniprot.org/citations/26616734" target="\_blank">26616734</a>). Also involved in late G2/M checkpoint following DNA damage through a process of post- transcriptional mRNA stabilization: following DNA damage, relocalizes from nucleus to cytoplasm and phosphorylates HNRNPAO and PARN, leading to stabilization of GADD45A mRNA. Involved in toll-like receptor signaling pathway (TLR) in dendritic cells: required for acute TLR- induced macropinocytosis by phosphorylating and activating RPS6KA3.

#### **Cellular Location**

Cytoplasm. Nucleus. Note=Phosphorylation and subsequent activation releases the autoinhibitory helix, resulting in the export from the nucleus into the cytoplasm

#### **Tissue Location**

Expressed in all tissues examined.

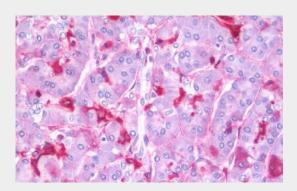
Volume 50 µl

# MAPKAPK2 / MAPKAP Kinase 2 Antibody (aa300-350) - Protocols

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

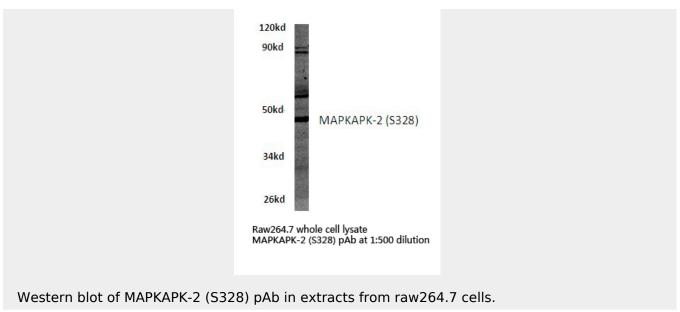
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

## MAPKAPK2 / MAPKAP Kinase 2 Antibody (aa300-350) - Images



Anti-MAPKAPK2 / MK2 antibody IHC staining of human pancreas.





# MAPKAPK2 / MAPKAP Kinase 2 Antibody (aa300-350) - Background

Stress-activated serine/threonine-protein kinase involved in cytokines production, endocytosis, reorganization of the cytoskeleton, cell migration, cell cycle control, chromatin remodeling, DNA damage response and transcriptional regulation. Following stress, it is phosphorylated and activated by MAP kinase p38-alpha/MAPK14, leading to phosphorylation of substrates. Phosphorylates serine in the peptide sequence, Hyd-X-R-X(2)-S, where Hyd is a large hydrophobic residue. Phosphorylates ALOX5, CDC25B, CDC25C, ELAVL1, HNRNPA0, HSF1, HSP27/HSPB1, KRT18, KRT20, LIMK1, LSP1, PABPC1, PARN, PDE4A, RCSD1, RPS6KA3, TAB3 and TTP/ZFP36. Mediates phosphorylation of HSP27/HSPB1 in response to stress, leading to dissociate HSP27/HSPB1 from large small heat- shock protein (sHsps) oligomers and impair their chaperone activities and ability to protect against oxidative stress effectively. Involved in inflammatory response by regulating tumor necrosis factor (TNF) and IL6 production post-transcriptionally: acts by phosphorylating AU-rich elements (AREs)-binding proteins ELAVL1, HNRNPAO, PABPC1 and TTP/ZFP36, leading to regulate the stability and translation of TNF and IL6 mRNAs. Phosphorylation of TTP/ZFP36, a major post-transcriptional regulator of TNF, promotes its binding to 14-3-3 proteins and reduces its ARE mRNA affinity leading to inhibition of dependent degradation of ARE-containing transcript. Also involved in late G2/M checkpoint following DNA damage through a process of post-transcriptional mRNA stabilization: following DNA damage, relocalizes from nucleus to cytoplasm and phosphorylates HNRNPAO and PARN, leading to stabilize GADD45A mRNA. Involved in toll-like receptor signaling pathway (TLR) in dendritic cells: required for acute TLR-induced macropinocytosis by phosphorylating and activating RPS6KA3.

# MAPKAPK2 / MAPKAP Kinase 2 Antibody (aa300-350) - References

Zu Y.-L., et al. Biochem. Biophys. Res. Commun. 200:1118-1124(1994). Gregory S.G., et al. Nature 441:315-321(2006). Mural R.J., et al. Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases. Stokoe D., et al. Biochem. J. 296:843-849(1993). Jakob U., et al. J. Biol. Chem. 268:1517-1520(1993).