

**Phospho-MSK1 (Thr581) Antibody**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP3909a****Specification**

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**Phospho-MSK1 (Thr581) Antibody - Product Information**

Application	WB,E
Primary Accession	<a href="#">O75582</a>
Other Accession	<a href="#">Q5F3L1</a> , <a href="#">Q8C050</a>
Reactivity	Human
Predicted	Chicken, Mouse
Host	Rabbit
Clonality	polyclonal
Isotype	Rabbit IgG
Calculated MW	89865

**Phospho-MSK1 (Thr581) Antibody - Additional Information****Gene ID** 9252**Other Names**

Ribosomal protein S6 kinase alpha-5, S6K-alpha-5, 2.7.11.1, 90 kDa ribosomal protein S6 kinase 5, Nuclear mitogen- and stress-activated protein kinase 1, RSK-like protein kinase, RSKL, RPS6KA5, MSK1

**Target/Specificity**

This Phospho-MSK1 (Thr581) antibody is generated from a rabbit immunized with a KLH conjugated synthetic peptide between 549-582 amino acids from human MSK1.

**Dilution**

WB~~1:1000

E~~Use at an assay dependent concentration.

**Format**

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

**Storage**

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

Phospho-MSK1 (Thr581) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**Phospho-MSK1 (Thr581) Antibody - Protein Information****Name** RPS6KA5

## Synonyms MSK1

**Function** Serine/threonine-protein kinase that is required for the mitogen or stress-induced phosphorylation of the transcription factors CREB1 and ATF1 and for the regulation of the transcription factors RELA, STAT3 and ETV1/ER81, and that contributes to gene activation by histone phosphorylation and functions in the regulation of inflammatory genes (PubMed:[11909979](#), PubMed:[12569367](#), PubMed:[12763138](#), PubMed:[18511904](#), PubMed:[9687510](#), PubMed:[9873047](#)). Phosphorylates CREB1 and ATF1 in response to mitogenic or stress stimuli such as UV-C irradiation, epidermal growth factor (EGF) and anisomycin (PubMed:[11909979](#), PubMed:[9873047](#)). Plays an essential role in the control of RELA transcriptional activity in response to TNF and upon glucocorticoid, associates in the cytoplasm with the glucocorticoid receptor NR3C1 and contributes to RELA inhibition and repression of inflammatory gene expression (PubMed:[12628924](#), PubMed:[18511904](#)). In skeletal myoblasts is required for phosphorylation of RELA at 'Ser-276' during oxidative stress (PubMed:[12628924](#)). In erythropoietin-stimulated cells, is necessary for the 'Ser-727' phosphorylation of STAT3 and regulation of its transcriptional potential (PubMed:[12763138](#)). Phosphorylates ETV1/ER81 at 'Ser-191' and 'Ser-216', and thereby regulates its ability to stimulate transcription, which may be important during development and breast tumor formation (PubMed:[12569367](#)). Directly represses transcription via phosphorylation of 'Ser-1' of histone H2A (PubMed:[15010469](#)). Phosphorylates 'Ser-10' of histone H3 in response to mitogenics, stress stimuli and EGF, which results in the transcriptional activation of several immediate early genes, including proto-oncogenes c-fos/FOS and c-jun/JUN (PubMed:[12773393](#)). May also phosphorylate 'Ser-28' of histone H3 (PubMed:[12773393](#)). Mediates the mitogen- and stress-induced phosphorylation of high mobility group protein 1 (HMGN1/HMG14) (PubMed:[12773393](#)). In lipopolysaccharide-stimulated primary macrophages, acts downstream of the Toll-like receptor TLR4 to limit the production of pro-inflammatory cytokines (By similarity). Functions probably by inducing transcription of the MAP kinase phosphatase DUSP1 and the anti-inflammatory cytokine interleukin 10 (IL10), via CREB1 and ATF1 transcription factors (By similarity). Plays a role in neuronal cell death by mediating the downstream effects of excitotoxic injury (By similarity). Phosphorylates TRIM7 at 'Ser-107' in response to growth factor signaling via the MEK/ERK pathway, thereby stimulating its ubiquitin ligase activity (PubMed:[25851810](#)).

## Cellular Location

Nucleus. Cytoplasm. Note=Predominantly nuclear. Exported into cytoplasm in response to glucocorticoid

## Tissue Location

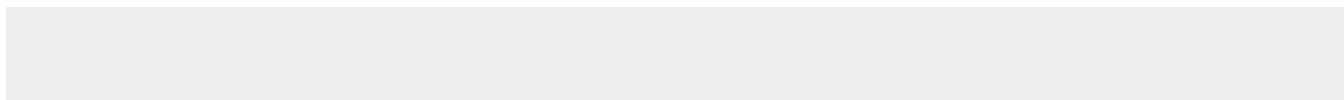
Widely expressed with high levels in heart, brain and placenta. Less abundant in lung, kidney and liver

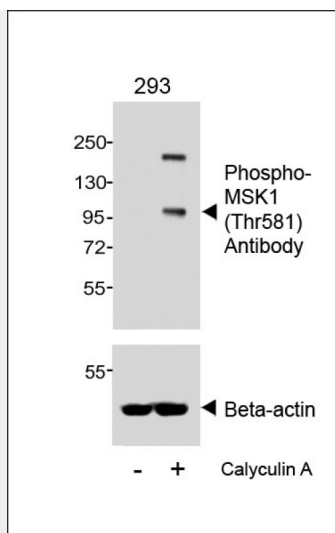
## Phospho-MSK1 (Thr581) Antibody - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

## Phospho-MSK1 (Thr581) Antibody - Images





Western blot analysis of lysates from 293 cell line, untreated or treated with Calyculin A, 100nM, 30min, using Phospho-MSK1 (Thr581) Antibody (upper) or Beta-actin (lower).

### Phospho-MSK1 (Thr581) Antibody - Background

Serine/threonine-protein kinase that is required for the mitogen or stress-induced phosphorylation of the transcription factors CREB1 and ATF1 and for the regulation of the transcription factors RELA, STAT3 and ETV1/ER81, and that contributes to gene activation by histone phosphorylation and functions in the regulation of inflammatory genes. Phosphorylates CREB1 and ATF1 in response to mitogenic or stress stimuli such as UV-C irradiation, epidermal growth factor (EGF) and anisomycin. Plays an essential role in the control of RELA transcriptional activity in response to TNF and upon glucocorticoid, associates in the cytoplasm with the glucocorticoid receptor NR3C1 and contributes to RELA inhibition and repression of inflammatory gene expression. In skeletal myoblasts is required for phosphorylation of RELA at 'Ser-276' during oxidative stress. In erythropoietin-stimulated cells, is necessary for the 'Ser-727' phosphorylation of STAT3 and regulation of its transcriptional potential. Phosphorylates ETV1/ER81 at 'Ser-191' and 'Ser-216', and thereby regulates its ability to stimulate transcription, which may be important during development and breast tumor formation. Directly represses transcription via phosphorylation of 'Ser-1' of histone H2A. Phosphorylates 'Ser-10' of histone H3 in response to mitogenics, stress stimuli and EGF, which results in the transcriptional activation of several immediate early genes, including proto- oncogenes c-fos/FOS and c-jun/JUN. May also phosphorylate 'Ser-28' of histone H3. Mediates the mitogen- and stress-induced phosphorylation of high mobility group protein 1 (HMGN1/HMG14). In lipopolysaccharide-stimulated primary macrophages, acts downstream of the Toll-like receptor TLR4 to limit the production of pro- inflammatory cytokines. Functions probably by inducing transcription of the MAP kinase phosphatase DUSP1 and the anti- inflammatory cytokine interleukin 10 (IL10), via CREB1 and ATF1 transcription factors. Plays a role in neuronal cell death by mediating the downstream effects of excitotoxic injury.

### Phospho-MSK1 (Thr581) Antibody - References

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