

## Purified anti-p38 MAPK Phospho (Thr180/Tyr182) Antibody

<b>Catalog# / Size</b>	690201 / 25 µg 690202 / 100 µg
<b>Clone</b>	A16016A
<b>Regulatory Status</b>	RUO
<b>Other Names</b>	p38α, Mitogen-activated protein kinase 14, MAPK 14, CSBP
<b>Isotype</b>	Mouse IgG1, κ
<b>Description</b>	<p>Mitogen activated protein kinases (MAPK) are a family of highly conserved intracellular kinases that transduce extracellular signals relayed by surface receptors or various types of damage. Three subfamilies exist in mammals, including ERK, JNK, and p38 kinases. Four p38 MAPK family members have been identified: p38a, p38b, p38g, and p38d. p38a is ubiquitously expressed usually at high levels, whereas p38b is expressed at lower levels. The expression patterns of p38g and p38d are more restricted. Most of the functions that are generally ascribed to p38 MAPKs refer to p38a, which is encoded by the MAPK14 gene. The p38 MAP kinase is activated by treatment of cells with proinflammatory cytokines (e.g. TNF and IL-1) or by exposure of cells to environmental stress (e.g. UV radiation and osmotic shock). This activation results in the phosphorylation of residues Thr180 and Tyr182. Over 100 proteins can be directly phosphorylated by p38a and a significant proportion of them are involved in the regulation of gene expression. In addition, the p38a pathway can control at different levels the production of extracellular signaling molecules, such as cytokines, chemokines, and growth factors.</p>

The p38a signaling pathway has dual role in tumorigenesis. During oncogene-induced tumor initiation and in the early response to carcinogens, p38a mainly acts as a tumor suppressor by maintaining cell homeostasis and eventually inducing cell death. However, p38a function is sometimes altered in the tumor cell so that it favors tumor progression. This might be due to changes in gene expression programs that accompany malignant cell transformation or could be driven by different stimuli available in the microenvironment.

### Product Details

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<b>Verified Reactivity</b>	Human, Mouse
<b>Antibody Type</b>	Monoclonal
<b>Host Species</b>	Mouse
<b>Immunogen</b>	Human p38 MAPK peptide phosphorylated at Thr 180 and Tyr182
<b>Formulation</b>	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
<b>Preparation</b>	The antibody was purified by affinity chromatography.
<b>Concentration</b>	0.5 mg/ml
<b>Storage &amp; Handling</b>	The antibody solution should be stored undiluted between 2°C and 8°C.
<b>Application</b>	<a href="#">WB - Quality tested</a> <a href="#">ICFC - Verified</a>
<b>Recommended Usage</b>	Each lot of this antibody is quality control tested by <a href="#">Western blotting</a> . For Western blotting, the suggested use of this reagent is 0.25 - 2 µg per ml. It is recommended that the reagent be titrated for optimal performance for each application.
<b>Application Notes</b>	29kD isoform of p38a may show up with longer exposure or hybridization with higher concentration of primary antibody in some cell lines.
<b>Product Citations</b>	1. Wang F, <i>et al.</i> 2020. Int J Oncol. 57:707. <a href="#">PubMed</a>
<b>RRID</b>	AB_2801132 (BioLegend Cat. No. 690201) AB_2801133 (BioLegend Cat. No. 690202)

## Antigen Details

<b>Structure</b>	390 amino acids, predicted molecular weight of p38 $\alpha$ is 41kD; molecular weight of other isoforms of p38 $\alpha$ range from 29kDa to 35kD.
<b>Distribution</b>	Cytoplasm, nucleus
<b>Function</b>	Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway. MAPK14 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.
<b>Interaction</b>	Component of a signaling complex containing at least AKAP13, PKN1, MAPK14, ZAK and MAP2K3. Binds to a kinase interaction motif within the protein tyrosine phosphatase, PTPRR. Interacts with SPAG9 and GADD45A. Interacts with CDC25B, CDC25C, DUSP1, DUSP10, DUSP16, NP60, SUPT20H and TAB1. Interacts with casein kinase II subunits CSNK2A1 and CSNK2B. Interacts with PPM1D. Interacts with CDK5RAP3; recruits PPM1D to MAPK14 and may regulate its dephosphorylation.
<b>Biology Area</b>	Cell Biology, Signal Transduction
<b>Molecular Family</b>	Phospho-Proteins, Protein Kinases/Phosphatase
<b>Antigen References</b>	<ol style="list-style-type: none"><li>1. Sosa MS, <i>et al.</i> 2011, <i>Clin Cancer Res.</i> 17:5850</li><li>2. Igea A &amp; Nebreda AR. 2015, <i>Cancer Res.</i> 75:3997</li><li>3. Wagner EF &amp; Nebreda AR. 2009, <i>Nat Rev Cancer.</i> 9:537</li><li>4. Hui L, <i>et al.</i> 2007, <i>Cell cycle.</i> 6:2429</li><li>5. Bulavin DV &amp; Fornace AJ Jr. 2004, <i>Adv Cancer Res.</i> 92:95</li><li>6. Gupta J, <i>et al.</i> 2014, <i>Cancer cell.</i> 25:484</li><li>7. Otsuka M, <i>et al.</i> 2010, <i>Gastroenterology.</i> 138:1255</li></ol>
<b>Gene ID</b>	<a href="#">1432</a>

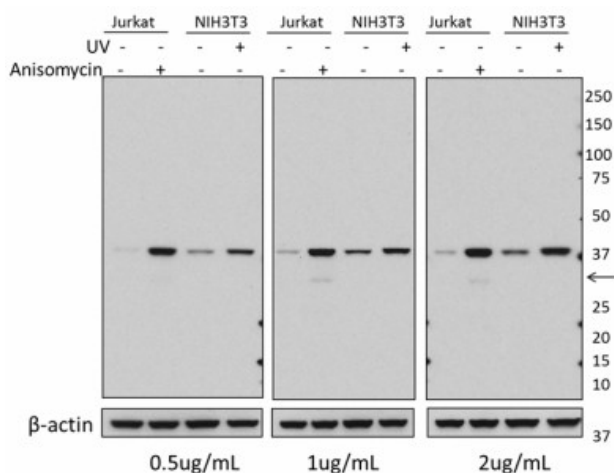
## Related Protocols

[Western Blotting Protocol](#)

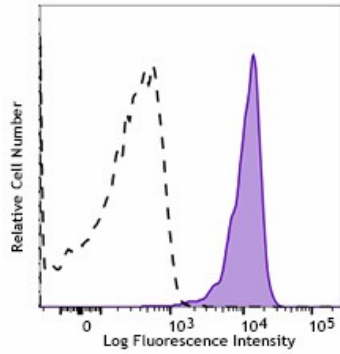
## Other Formats

Purified anti-p38 MAPK Phospho (Thr180/Tyr182), PE anti-p38 MAPK Phospho (Thr180/Tyr182)

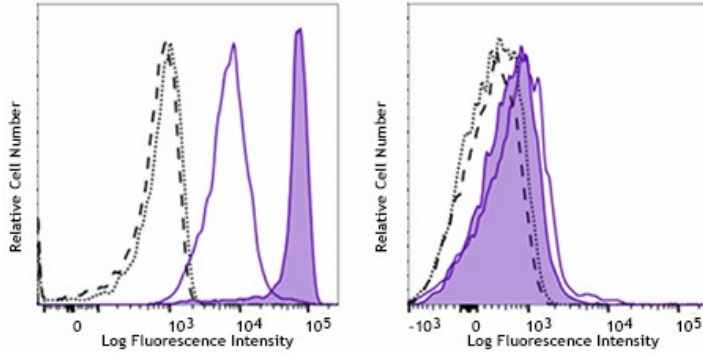
## Product Data



Jurkat cells were treated with 25 µg/mL anisomycin for 15 min at 37°C. NIH3T3 cells were UV treated for 3min and then cultured for 1h. Total cell lysates (15µg protein) were resolved by 4-20% Tris-glycine gel electrophoresis, transferred to nitrocellulose, and probed with 0.5-2µg/mL anti-p38 MAPK phospho (Thr180/Tyr182) antibody (clone A16016A) antibody (upper) or loading control β-actin (Poly6221, Cat. No. 622101) antibody (lower). The arrow indicate 29kD isoform. Proteins were visualized using a goat anti-mouse-IgG secondary antibody conjugated to HRP (Cat. No. 405306) and chemiluminescence detection.



Human peripheral blood lymphocytes were stimulated with (filled histogram) or without (open histogram) Cell Activation Cocktail without Brefeldin A (Cat No. 423302) for 15 minutes, fixed with Fixation Buffer, permeabilized with True-Phos™ Perm Buffer (Cat No. 425401), and intracellularly stained with purified anti-p38 MAPK Phospho (THhr180/Tyr182) (clone A16016A), followed by anti-mouse IgG PE.



Human peripheral blood monocytes (left) and lymphocytes (right) were stimulated with or without LPS (100ng/ml) for 15 minutes, fixed with Fixation Buffer, permeabilized with True-Phos™ Perm Buffer (Cat No. 425401), and intracellularly stained with purified anti-p38 MAPK Phospho (Thr180/Tyr182) (clone A16016A) (filled histogram: stimulated cells; open histogram with solid line: unstimulated cells) or purified mouse IgG1,  $\kappa$  isotype control, followed by anti-mouse IgG PE (open histogram dash line: stimulated cells; dot line: unstimulated cells).

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