

Alexa Fluor® 647 anti-p38 MAPK Phospho (Thr180/Tyr182) Recombinant Antibody

Catalog# / Size	690257 / 25 tests 690258 / 100 tests
Clone	A16016A.Rec
Regulatory Status	RUO
Other Names	p38α, Mitogen-Activated Protein Kinase 14, MAPK 14, CSBP
Isotype	Mouse IgG1, κ
Description	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. The p38a signaling pathway has dual roles 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

Verified Reactivity	Human, Mouse
Antibody Type	Recombinant
Host Species	Mouse
Immunogen	Synthetic peptide corresponding to human p38 MAPK phosphorylated at threonine 180 and tryrosine 182
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and BSA (origin USA)
Preparation	The antibody was purified by affinity chromatography and conjugated with Alexa Fluor® 647 under optimal conditions.
Concentration	Lot-specific (to obtain lot-specific concentration and expiration, please enter the lot number in our Certificate of Analysis online tool).
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Application	ICFC - Quality tested
Recommended Usage	Each lot of this antibody is quality control tested by intracellular flow cytometry using our True-Phos™ Perm Buffer in Cell Suspensions Protocol. For flow cytometric staining, the suggested use of this reagent is 5 µL per million cells in 100 µL staining volume or 5 µL per 100 µL of whole blood. It is recommended that the reagent be titrated for optimal performance for each application.

* Alexa Fluor® 647 has a maximum emission of 668 nm when it is excited at 633 nm / 635 nm.

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Excitation Laser	Red Laser (633 nm)
Application Notes	A16016A.Rec is a recombinant antibody derived from BioLegend clone A16016A (Cat. No. 690202). This clone is predicted to recognize rat p38 MAPK phosphorylated at threonine 180 and tyrosine 182 due to complete sequence homology between the immunizing peptide and the rat p38 MAPK ortholog.
Additional Product Notes	For use of this antibody in intracellular staining for flow cytometry (ICFC), we recommend using True-Phos™ Perm Buffer (Cat. No. 425401) for fixation/permeabilization.

Antigen Details

Structure	390 amino acids, predicted molecular weight of p38α is 41 kD; molecular weight of other isoforms of p38α range from 29 kD to 35 kD.
Distribution	Cytoplasm and nucleus/Ubiquitously expressed
Function	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.
Interaction	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.
Biology Area	Cell Biology, Signal Transduction
Molecular Family	Phospho-Proteins, Protein Kinases/Phosphatase
Antigen References	1. Sosa MS, <i>et al.</i> 2011. <i>Clin Cancer Res.</i> 17:5850-7 2. Igea A and Nebreda AR. 2015. <i>Cancer Res.</i> 75:3997-4002 3. Wagner EF and Nebreda AR. 2009. <i>Nat Rev Cancer.</i> 9:537-49 4. Hui L, <i>et al.</i> 2007. <i>Cell Cycle.</i> 6:2429-33 5. Bulavin DV and Fornace AJ Jr. 2004. <i>Adv Cancer Res.</i> 92:95-118 6. Gupta J, <i>et al.</i> 2014. <i>Cancer Cell.</i> 25:484-500 7. Otsuka M, <i>et al.</i> 2010. <i>Gastroenterology.</i> 138:1255-65
Gene ID	1432

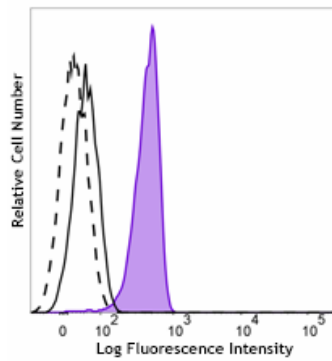
Related Protocols

- [Intracellular Staining With True-Phos™ Perm Buffer in Cell Suspensions Protocol](#)

Other Formats

Purified anti-p38 MAPK Phospho (Thr180/Tyr182) Recombinant Antibody, Alexa Fluor® 488 anti-p38 MAPK Phospho (Thr180/Tyr182) Recombinant Antibody, Alexa Fluor® 647 anti-p38 MAPK Phospho (Thr180/Tyr182) Recombinant Antibody, PE anti-p38 MAPK Phospho (Thr180/Tyr182) Recombinant Antibody

Product Data



PBMCs untreated (negative control, open histogram) or treated with Cell Activation Cocktail (Cat. No. 423301) (positive control, filled histogram) were fixed and permeabilized using the True-Phos™ Perm Buffer Set (Cat. No. 425401) and intracellularly stained with Alexa Fluor® 647 anti-p38 MAPK Phospho (Thr180/Tyr182) Recombinant antibody (clone A16016A.Rec), or Alexa Fluor® 647 anti-Mouse IgG1, κ isotype control (open histogram, dashed line) (representative histogram for either untreated or treated cells) (Cat. No. 400136).

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