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# Product Data Sheet

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## PE anti-p38 MAPK Phospho (Thr180/Tyr182)

**Catalog # /** 4051015 / 25 tests  
**Size:** 4051020 / 100 tests

**Clone:** A16016A

**Isotype:** Mouse IgG1,  $\kappa$

**Immunogen:** Human p38 MAPK peptide phosphorylated at Thr 180 and Tyr182

**Reactivity:** Human, Mouse

**Preparation:** The antibody was purified by affinity chromatography and conjugated with PE under optimal conditions. The solution is free of unconjugated PE and unconjugated antibody.

**Formulation:** Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and 0.2% (w/v) BSA (origin USA)

**Concentration:** Lot-specific

□ Human peripheral blood lymphocytes were stimulated with (filled histogram) or without (open histogram) Cell Activation Cocktail without Brefeldin A for 15 minutes, fixed with Fixation Buffer, permeabilized with True-Phos™ Perm Buffer (Cat No. 2727005), and intracellularly stained with anti-p38 MAPK Phospho (Thr180/Tyr182) (clone A16016A) PE.

## Applications:

**Applications:** Intracellular Flow Cytometry

**Recommended Usage:** Each lot of this antibody is quality control tested by intracellular immunofluorescent staining with flow cytometric analysis. For flow cytometric staining, the suggested use of this reagent is 5  $\mu$ L per million cells in 100  $\mu$ L staining volume or 5  $\mu$ L per 100  $\mu$ L of whole blood. It is recommended that the reagent be titrated for optimal performance for each application.

**Application Notes:** 29kD isoform of p38 $\alpha$  may show up with longer exposure or hybridization with higher concentration of primary antibody in some cell lines.

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**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 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.

**Antigen  
References:**

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7. Otsuka M, *et al.* 2010, *Gastroenterology.* 138:1255