

# p44/42 MAPK (Erk1/2) Control Proteins



✓ Controls for 10 western blots

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**Background:** Mitogen-activated protein kinases (MAPKs) are a widely conserved family of serine/threonine protein kinases involved in many cellular programs such as cell proliferation, differentiation, motility, and death. The p44/42 MAPK (ERK1/2) signaling pathway can be activated in response to a diverse range of extracellular stimuli including mitogens, growth factors, and cytokines (1-3) and is an important target in the diagnosis and treatment of cancer (4). Upon stimulation, a sequential three-part protein kinase cascade is initiated, consisting of a MAP kinase kinase kinase (MAPKKK or MAP3K), a MAP kinase kinase (MAPKK or MAP2K), and a MAP kinase (MAPK). Multiple p44/42 MAP3Ks have been identified, including members of the Raf family as well as Mos and Tpl2/Cot. MEK1 and MEK2 are the primary MAPKKs in this pathway (5,6). MEK1 and MEK2 activate p44 and p42 through phosphorylation of activation loop residues Thr202/Tyr204 and Thr185/Tyr187, respectively. Several downstream targets of p44/42 have been identified, including p90RSK (7) and the transcription factor Elk-1 (8,9). p44/42 are negatively regulated by a family of dual-specificity (Thr/Tyr) MAPK phosphatases, known as DUSPs or MKPs (10), along with MEK inhibitors such as U0126 and PD98059.

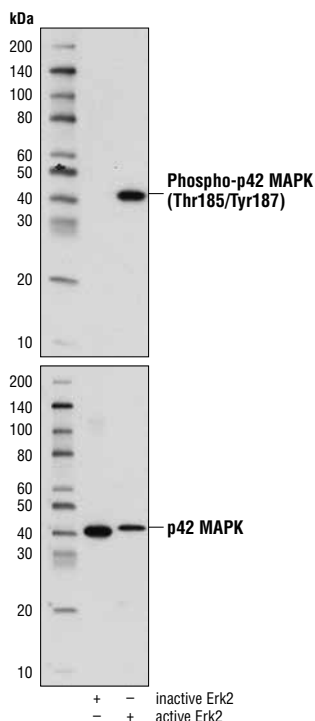
**Description:**

Nonphosphorylated p44/42 MAPK (Erk1/2) Control Protein: Bacterially expressed, kinase inactive, Erk2 protein serves as a negative control for Western blotting experiments. Molecular weight of MAP kinase (Erk2) protein is 42 kDa. Supplied in SDS Sample buffer.

Phosphorylated MAP Kinase Control Protein: Fully phosphorylated Erk2 protein serves as a positive control for western blotting experiments. MAP kinase is phosphorylated by MEK and purified free of nonphosphorylated MAP kinase. Molecular weight of MAP kinase (Erk2) protein is 42 kDa. Supplied in SDS Sample Buffer. protein is 42 kDa.

**Molecular Weight:** 42

**Directions For Use:** As controls, we recommend using 10 µl of phosphorylated and nonphosphorylated p44/42 MAP kinase control proteins. Boil control proteins for 2 minutes prior to use.



Western blot analysis of bacterially expressed, kinase inactive Erk2 protein and fully phosphorylated active Erk2 protein using Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (20G11) Rabbit mAb #4376 (upper) or p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb #4695 (lower).

**Entrez Gene ID** #5595, 5594  
**UniProt ID** #P27361, P28482

**Storage:** Supplied in SDS Sample Buffer: 62.5 mM Tris-HCl (pH 6.8 at 25°C), 2% w/v SDS, 10% glycerol, 50 mM DTT, 0.01% w/v bromophenol blue or phenol red. Store at -20°C.

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**Background References:**

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