Anti-Phospho-Thr^{202}/Tyr^{204} ERK/MAPK Antibody

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Catalog#: p160-2024 **Size:** 100 µl

Host	Applications	Species Tested	Species Reactivity*	Molecular Reference
Rabbit	WB 1:1000 IHC 1:500	H, M, R	B, C, Ch, NHP, X, Z	~42 – 44 kDa

Product Description: Affinity purified rabbit polyclonal antibody.

Biological Significance: Extracellular-Signal Regulated Kinase/Mitogen-Activated Protein Kinase (ERK/MAPK) is an integral component of cellular signaling during mitogenesis and differentiation of mitotic cells and also is thought to play a key role in learning and memory (Adams and Sweatt, 2002; Ahn, 1993; Tanoue and Nishida, 2003; Johnson and Lapadat, 2002). The activity of this kinase is regulated by dual phosphorylation at Thr^{202} and Tyr^{204} (Ahn, 1993).

Antigen: Phosphopeptide corresponding to amino acid residues surrounding the phospho-Thr^{202} and Tyr^{204} of rat ERK/MAPK.

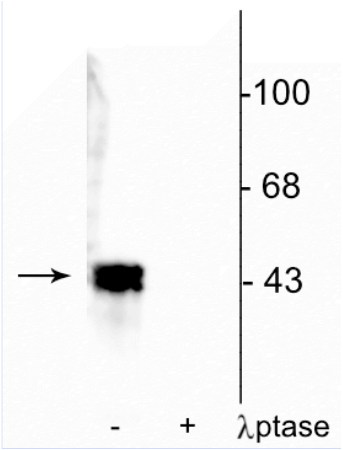
Antibody Specificity: Specific for endogenous levels of the ~42 - 44 kDa ERK/MAPK protein phosphorylated at Thr^{202} and Tyr^{204}. Immunolabeling is completely eliminated by treatment with λ-Ptase.

Purification Method: Prepared from pooled rabbit serum by affinity purification via sequential chromatography on phospho and non-phosphopeptide affinity columns.

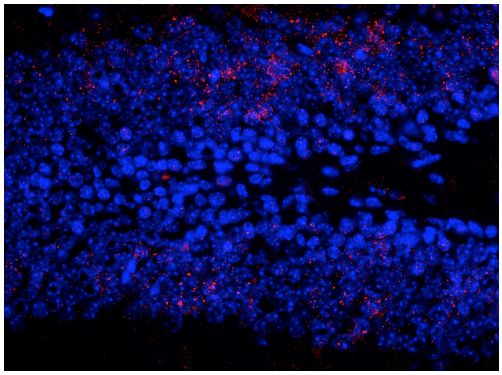
Quality Control Tests: Western blots performed on each lot.

Packaging: 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg BSA per ml and 50% glycerol.

Storage and Stability: Shipped on blue ice. Storage at -20°C is recommended, as aliquots may be taken without freeze/thawing due to presence of 50% glycerol. Stable for at least 1 year at -20°C.



Western blot of human T47D cell lysate showing specific immunolabeling of ~42-44 kDa ERK/MAPK protein phosphorylated at Thr^{202}/Tyr^{204} in the first lane (-). Phosphospecificity is shown in the second lane (+) where immunolabeling is completely eliminated by blot treatment with *lambda* phosphatase (λ-Ptase, 1200 units for 30 min).



Immunostaining of granule cells in the dentate gyrus of saline treated mouse showing ERK/MAPK when phosphorylated at Thr^{202}/Tyr^{204} (red) and nuclei (blue). Photo courtesy of Robert Wine.

Application Key: **WB** = Western Blot **IF** = Immunofluorescence **IHC** = Immunohistochemistry **IP** = Immunoprecipitation
Species Reactivity Key: **All-**All Species **A-**Avian **Amp-**Amphibian **Ar-***Arabidopsis* **B-**Bovine **C-**Canine **Ch-**Chicken **D-***Drosophilia* **GP-**Guinea Pig **H-**Human **Ha-**Hamster **M-**Mouse **NHP-** Non-human primate **P-**Pig **R-**Rat **S-**Sheep **X-***Xenopus* **Z-**Zebrafish
*Species assumed based on 100% homology with sequence used as antigen **For Research Use Only**

Product Specific References:

Morgan, J. E., Shanderson, R. L., Boyd, N. H., Cacan, E., & Greer, S. F. (2015). The class II transactivator (CIITA) is regulated by post-translational modification cross-talk between ERK1/2 phosphorylation, mono-ubiquitination and Lys63 ubiquitination. Bioscience reports, 35(4), e00233.

General References:

Tanoue TJ, Nishida, E (2003) Molecular recognitions in the MAP kinase cascades. Cellular Signaling 15:455-462.

Johnson GL, Lapadat R (2002) Mitogen-activated protein kinase pathways mediated by ERK, JNK, and p38 protein kinases. Science 298:1911-1912.

Adams JP, Sweatt JD (2002) Molecular psychology: Roles for the ERK MAP kinase cascade in memory. Annu Rev Pharmacol Toxicol 42:135-163.

Ahn, NG (1993) The MAP kinase cascade. Discovery of a new signal transduction pathway. Mol Cell Biochem 127-128:201-209.