

## Product Information

### Anti-MAP Kinase 2 (ERK-2)

produced in rabbit, IgG fraction of antiserum

Catalog Number **M7556**

#### Product Description

Anti-MAP Kinase 2 (MAPK2 or Extracellular Regulated Protein Kinase, ERK-2) is produced in rabbit using purified recombinant mouse MAP kinase 2 as immunogen. This antibody does not cross react with MAP kinase 1 (ERK-1) or interfere with kinase activity. The antibody is purified using protein G chromatography.

Anti-MAP Kinase 2 recognizes the 42 kDa MAP kinase 2 encoded by the mapk gene. It reacts with mouse, human and rat MAPK2. Anti-MAP Kinase 2 may be used for the detection of MAPK2 by immunoblotting cell lysates of human A431 carcinoma cells, mouse 3T3 fibroblasts and rat L6 skeletal fibroblasts. Anti-MAP Kinase 2 may also be used for immunoprecipitation of MAPK2 from a mouse 3T3 fibroblast cell lysate.

MAP Kinase 2 or ERK-2 is a part of complicated signal transduction cascade. This cascade can be initiated by growth factors binding to receptor tyrosine kinases, by the activation of low molecular weight GTP-binding proteins or by G protein-coupled receptors. The initiation of this pathway has been linked to changes in several cellular pathways, including proliferation, differentiation, cellular morphology and oncogenesis. The pathway begins with the activation of a MAP kinase kinase (such as Raf and MEKK) that subsequently activates a MAP kinase kinase (such as MEK1 or MEK2). MEK then phosphorylates both tyrosine and threonine residues resulting in activation of a MAP kinase<sup>1,2</sup>, such as ERK 1(p44<sub>mapk</sub>)<sup>3</sup> or ERK 2(p42<sub>mapk</sub>)<sup>4</sup>. Phosphorylation at both the tyrosine and threonine residues is necessary for full enzymatic activity<sup>5</sup>. Following activation, MAP kinase phosphorylates several nuclear targets, including transcription factors. In addition, MAP kinase phosphorylates membrane proteins and cytoskeletal proteins<sup>6,7</sup>. Termination of MAP kinase signaling appears to be mediated by MAP kinase phosphatase, MKP-1, a dual specificity Thr/Tyr phosphatase which

dephosphorylates and inactivates MAP kinase<sup>8</sup>. MAP kinases are widely expressed in the central nervous system, thymus, spleen, heart, lung and kidney, and is expressed in high levels in PC-12 cells and in fibroblasts<sup>2,6</sup>. Antibodies that react specifically with MAP kinase may be used to study the specific activation requirements, differential tissue expression and intracellular localization of MAP kinase in normal and neoplastic tissue.

#### Reagent

Supplied as a solution in 0.02M phosphate buffer, pH 7.6, 0.25M NaCl, and ≤ 0.1% sodium azide.

Protein Concentration: ~1 mg/ml

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Storage/Stability

Store at -20 °C. Aliquot to avoid repeated freezing and thawing. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

#### Product Profile

**Immunoblotting:** a working concentration of 0.5-2 µg/ml is recommended.

**Immunoprecipitation:** 5 µg will immunoprecipitate MAPK2 from 0.5-1 mg of a mouse 3T3 fibroblast lysate.

**Note:** In order to obtain best results and assay sensitivity in different techniques and preparations we recommend determining optimal working dilutions by titration test.

## References

1. Ahn, N.G., et al., *Curr. Opin. Cell Biol.*, **4**, 992 (1992).
2. Seger, R., et al., *J. Biol. Chem.*, **267**, 14337 (1992).
3. Boulton, T.G, et al., *Science*, **249**, 64 (1990).
4. Her, J-H., et al., *Nucleic Acids Res.*, **19**, 3743 (1991).
5. Anderson, N.G., et al., *Nature*, **343**, 651 (1990).
6. Ray, L.B. and Sturgill., T.W., *Proc. Natl. Acad. Sci. USA*, **84**, 1502 (1987).
7. Boulton, T.G., et al., *Cell*, **65**, 663 (1991).
8. Sun, H., et al., *Cell*, **75**, 487 (1993).

SG,PHC 05/14-1