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## Product Data Sheet

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Product Name: MAPK3 Human  
 Cat. No.: GP22556  
 Batch No.: 1

### Product Data

Purity	>98%	Source	Escherichia Coli.
Physical Appearance	solid	Shipping Condition	Shipped with Ice Packs.
Synonyms	Mitogen-activated protein kinase 3; EC 2.7.11.24; Extracellular signal-regulated kinase 1; ERK-1; Insulin-stimulated MAP2 kinase; MAP kinase 1; MAPK 1; p44-ERK1; ERT2; p44-MAPK; Microtubule-associated protein 2 kinase; ERK1; PRKM3; P44ERK1; P44MAPK; HS44KDAP; HUMKER1A; MGC20180.		
Formulation	ERK1 is supplied containing 50mM Tris-HCl, 150mM NaCl, 2mM DTT, 5mM EDTA, pH 8.0.		

### Introduction

Extracellular signal-regulated kinases (ERKs) or classical MAP kinases are widely expressed protein kinase intracellular signaling molecules which are involved in functions including the regulation of meiosis, mitosis, and postmitotic functions in differentiated cells. Many different stimuli, including growth factors, cytokines, virus infection, ligands for heterotrimeric G protein-coupled receptors, transforming agents, and carcinogens, activate the ERK pathway. The term, "extracellular signal-regulated kinases", is sometimes used as a synonym for mitogen-activated protein kinase (MAPK), but has more recently been adopted for a specific subset of the mammalian MAPK family. In the MAPK/ERK pathway, Ras activates c-Raf, followed by MEK and then MAPK1/2 (below). Ras is typically activated by growth hormones through receptor tyrosine kinases and GRB2/SOS, but may also receive other signals. ERKs are known to activate many transcription factors and some downstream protein kinases. Disruption of the ERK pathway is common in cancers, especially Ras, c-Raf and receptors such as HER2. Mitogen-activated protein kinase 3 (MAPK3) is also known as "extracellular signal-regulated kinase 1" (ERK1). Transgenic gene knockout mice lacking MAPK3 are viable and it is thought that MAPK1 can fulfill most MAPK3 functions in most cells. The main exception is in T cells. Mice lacking MAPK3 have reduced T cell development past the

**Caution: Product has not been fully validated for medical applications. For research use only.**

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CD4+CD8+ stage.

### Stability

Store at 4°C if entire vial will be used within 2-4 weeks. Store, frozen at -20°C for longer periods of time. Avoid multiple freeze-thaw cycles.

### Background

ERK1/MAPK3 Recombinant is a highly active form produced by phosphorylation of the purified ERK1/MAPK3 in vitro with MEK1 is a non-glycosylated polypeptide having a molecular mass of 43.6 kDa. ERK1/MAPK3 is purified by proprietary chromatographic techniques.

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