

Product Information

**SILu™Lite MAPK1,
Mitogen activated protein kinase 1, human
recombinant, expressed in HEK cells
MS protein standard**

Catalog Number **MSST0010**
Storage Temperature $-20\text{ }^{\circ}\text{C}$

Synonym: Extracellular signal-regulated kinase 2 (Erk2)

Product Description

SILu™Lite MAPK1 is a recombinant human MAPK1 expressed in human 293 cells. It is a monomer of 380 amino acids (including N-terminal polyhistidine and FLAG® tags), with a calculated molecular mass of 43.8 kDa. SILu™Lite MAPK1 is an analytical standard designed to be used as starting material for preparation of calibrators and controls in LC-MS applications.

MAPK1 is a cytoplasmic protein that following activation is capable of translocating to the nucleus where it phosphorylates and regulates nuclear proteins (e.g., Elk-1, c-Myc, c-Jun, c-Fos, and C/EBP beta).¹ It is a protein serine/threonine kinase that is a member of the extracellular signal-regulated kinases (ERKs) which are activated in response to numerous growth factors and cytokines.² Aberrations in the RAS-MAPK complex (of which MAPK1 is a downstream effector) are implicated in several human cancers, and this renders the pathway an attractive therapeutic target.³

Each vial contains 50–65 µg of SILu™Lite MAPK1 standard, in a 0.1 mg/mL solution of 20 mM sodium phosphate, pH 8.0, 1 M NaCl, 1 mM EDTA, and 25% glycerol. Vial content was determined by the Bradford method using BSA as a calibrator. The correction factor from the Bradford method to Amino Acid Analysis is 90% for this protein.

Identity: Confirmed by peptide mapping

Purity: $\geq 95\%$ (SDS-PAGE)

UniProt: P28482

Sequence Information

The N-terminal polyhistidine and FLAG tags are italicized.

MDYKDDDDKGGHHHHHHHGGQAAAAAAGAGPEMV
RGQVFDVGPRTNLSYIGEGAYGMVCSAYDNVNKVR
VAIKKISPFHQTYCQRTLREIKILLRFRHENIIGINDIIR
APTIEQMKDVYIVQDLMETDLYKLLKTQHLSNDHICYF
LYQILRGLKYIHSANVLRDLKPSNLLLNTTCDLKICDF
GLARVADPDHDHTGFLTEYVATRWYRAPEIMLNSKG
YTKSIDIWSVGCILAEMLSNRPIFPKGKHYLDQLNHILGI
LGSPSQEDLNCIINLKARNYLLSLPHKNKVPWNRLFP
NADSKALDLLDKMLTFNPHKRIEVEQALAHPLYEQYY
DPSDEPIAEAPFKFDMELDDLPEKELKELIFEETARFQ
PGYRS

Precautions and Disclaimer

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

Storage/Stability

Store the product at $-20\text{ }^{\circ}\text{C}$. The product is stable for at least 2 years as supplied. After initial thawing it is recommended to store the protein in working aliquots at $-20\text{ }^{\circ}\text{C}$.

References

1. Levin-Salomon, V. et al., Isolation of Intrinsically Active (MEK-independent) Variants of the ERK Family of Mitogen-activated Protein (MAP) Kinases. *J. Biol. Chem.*, **283**, 34500-34510 (2008).
2. Boulton, T.G. et al., Purification and properties of extracellular signal-regulated kinase 1, and insulin-stimulated microtubule-associated protein 2 kinase. *Biochemistry*, **30**, 278-286 (1991).
3. Santaripa, L. et al., Targeting the MAPK-RAS-RAF signaling pathway in cancer therapy. *Expert Opin. Ther. Targets*, **16(1)**, 103-119 (2012).

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NA,AI,MAM,KR 08/16-1