

PRODUCT INFORMATION



HPK1 (human, recombinant)

Item No. 42014

Overview and Properties

Synonyms: MAP4K1, MAPK/ERK Kinase Kinase 1, MEK Kinase Kinase 1, MEKKK 1, Mitogen-activated Protein Kinase Kinase Kinase 1
Source: Active recombinant human HPK1 expressed in insect cells
Amino Acids: 1-297
Uniprot No.: Q92918
Molecular Weight: 33.2 kDa
Storage: -80°C (as supplied); avoid repeated freeze/thaw cycles
Stability: ≥1 year
Supplied in: 50 mM HEPES, pH 7.0, with 500 mM sodium chloride, and 5% glycerol
Endotoxin Testing: <1.0 EU/μg, determined by the LAL endotoxin assay

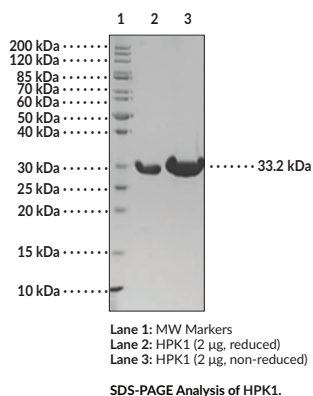
Protein

Concentration: *batch specific* mg/ml

Special Conditions: Rapid thaw with running water.

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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Description

Hematopoietic progenitor kinase 1 (HPK1) is a Ste20-like protein serine/threonine kinase and member of the MAP4K family with roles in cell signaling and immune regulation.¹⁻³ It is composed of an N-terminal kinase domain, a central region that contains four proline-rich sequences, a caspase cleavage site, and a C-terminal citron homology domain.^{1,2} HPK1 is expressed in hematopoietic cells and localizes to the cytosol. Phosphorylation and activation of HPK1 are dependent on adaptor proteins that link HPK1 to cell surface receptors, such as EGFR, and downstream gene transcription targets, including AP-1, NFAT, and IL-2, to facilitate cell signaling.² Low expression of *MAP4K1*, the gene encoding HPK1, is associated with prolonged survival in patients with renal clear cell carcinoma and low-grade glioma.³ *MAP4K1* expression is decreased in CD4⁺ T cells isolated from patients with systemic lupus erythematosus (SLE).⁴ Cayman's HPK1 (human, recombinant) protein can be used for enzyme activity assays. This protein has a calculated molecular weight of 33.2 kDa.

References

1. Zhou, L., Wang, T., Zhang, K., *et al.* The development of small-molecule inhibitors targeting HPK1. *Eur. J. Med. Chem.* **244**, 114819 (2022).
2. Boomer, J.S. and Tan, T.-H. Functional interactions of HPK1 with adaptor proteins. *J Cell Biochem* **95**(1), 34-44 (2005).
3. Si, J., Shi, X., Sun, S., *et al.* Hematopoietic progenitor kinase1 (HPK1) mediates T cell dysfunction and is a druggable target for T cell-based immunotherapies. *Cancer Cell* **38**(4), 551-566 (2020).
4. Chuang, H.-C. and Tan, T.-H. MAP4K family kinases and DUSP family phosphatases in T-cell signaling and systemic lupus erythematosus. *Cells* **8**(11), 1433 (2019).

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