

p38 delta/MAPK13 Protein, Human, Recombinant (GST)

General Information

Synonyms:	MAPK13;p38 δ ;PRKM13;MAPK-13;mitogen-activated protein kinase 13;P38 δ /MAPK13; p38delta;SAPK4
Protein Construction:	A DNA sequence encoding the full length of human MAPK13 (O15264) (Met 1-Leu 365) was fused with the GST tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	O15264
Molecular Weight:	68.4 kDa (predicted); 60 kDa (reducing conditions)

QC Testing

Biological Activity:	No Kinase Activity
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/ μ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μ m filter, containing 20 mM Tris, 500 mM NaCl, 2 mM GSH, 10% gly, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

The p38 family of mitogen-activated protein kinases (MAPK) includes p38 alpha (SAPK2a, CSBP), p38 beta (SAPK2b), p38 delta (SAPK4), and p38 gamma (SAPK3/ERK6). p38 alpha and p38 beta are widely expressed p38 isoforms that are involved in the regulation of cell proliferation, differentiation, development, and stress response. p38 delta, also known as MAPK13, is a regulator of differentiation-dependent gene expression in keratinocytes and has been a regulator of surface epithelial differentiation and apoptosis. p38 delta protein is upregulated in

Cholangiocarcinoma (CC) relative to hepatocellular carcinoma (HCC) and normal biliary tract tissues. p38 delta is important for motility and invasion of CC cells, suggesting that p38 delta may play an important role in CC metastasis. p38 delta is expressed in the epidermis, suggesting a role for p38 delta in regulating differentiation. p38 delta is the major p38 isoform driving suprabasal involucrin gene expression and that p38 delta directly regulates ERK1/2 activity via the formation of a p38 delta-ERK1/2 complex. Recent emerging evidence suggests that the p38 stress MAPK pathway may function as a tumor suppressor through regulating Ras-dependent and -independent proliferation, transformation, invasion, and cell death by isoform-specific mechanisms. p38 delta has an important role in promoting cell proliferation and tumor development in the epidermis and may have therapeutic implications for skin cancer.

Reference

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- Loesch M, et al. (2008) The p38 MAPK stress pathway as a tumor suppressor or more? *Front Biosci.* 13: 3581-93.
- Schindler EM, et al. (2009) p38delta Mitogen-activated protein kinase is essential for skin tumor development in mice. *Cancer Res.* 69(11): 4648-55.
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