

Human p38 alpha / MAPK14 Protein (Activated in vitro, His Tag)

Catalog Number: 10081-H07B-A



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Biological Solution Specialist

General Information

Gene Name Synonym:

CSBP, CSBP1, CSBP2, CSPB1, EXIP, Mxi2, PRKM14, PRKM15, RK, SAPK2A, p38, p38ALPHA

Protein Construction:

The amino acids corresponding to the full length of human MAPK14 isoform 1 (NP_001306.1) (Met1-Ser360) was fused with a polyhistidine tag at the N-terminus. Activated in vitro by MAP2K6 (10422-H20B1).

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 85 % as determined by SDS-PAGE

Bio Activity:

The specific activity was determined to be >50 nmol/min/mg using MBP as substrate.

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Met

Molecular Mass:

The recombinant human MAPK14 consists of 379 amino acids and predicts a molecular mass of 43.7 kDa.

Formulation:

Supplied as sterile 50 mM Tris-HCl, 150 mM NaCl, 0.25 mM DTT, 0.1 mM EDTA, 0.1 mM PMSF, 25 % glycerol, pH 7.5.

Usage Guide

Storage:

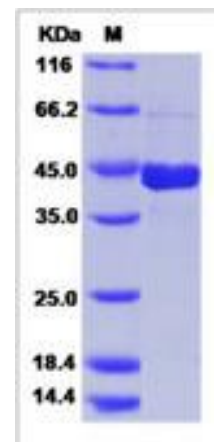
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

MAPK14 contains 1 protein kinase domain and belongs to the MAP kinase family. MAP kinases act as an integration point for multiple biochemical signals, and are involved in a wide variety of cellular processes such as proliferation, differentiation, transcription regulation and development. MAPK14 can be detected in brain, heart, placenta, pancreas and skeletal muscle and it is expressed to a lesser extent in lung, liver and kidney. MAPK14 is activated by various environmental stresses and proinflammatory cytokines. The activation requires its phosphorylation by MAP kinase kinases (MKKs), or its autophosphorylation triggered by the interaction of MAP3K7IP1/TAB1 protein with MAPK14. The substrates of p38 alpha include transcription regulator ATF2, MEF2C, and MAX, cell cycle regulator CDC25B, and tumor suppressor p53, which suggest the roles of p38 alpha in stress related transcription and cell cycle regulation, as well as in genotoxic stress response. In response to activation by environmental stress, pro-inflammatory cytokines and lipopolysaccharide, MAPK14 phosphorylates a number of transcription factors, such as ELK1 and ATF2 and several downstream kinases, such as MAPKAPK2 and MAPKAPK5. MAPK14 plays a critical role in the production of some cytokines, for example IL-6. It may play a role in stabilization of EPO mRNA during hypoxic stress. Isoform Mxi2 activation is stimulated by mitogens and oxidative stress and only poorly phosphorylates ELK1 and ATF2.

References

1. Luo X, et al. (2011) Study on p38 mitogen activated protein kinase in vascular endothelial cells dysfunction in preeclampsia. Zhonghua Fu Chan Ke Za Zhi. 46(1):36-40.
2. Park CH, et al. (2011) Epidermal growth factor-induced matrix metalloproteinase-1 expression is negatively regulated by p38 MAPK in human skin fibroblasts. J Dermatol Sci. 64(2):134-41.
3. Lee JY, et al. (2011) Curcumin induces EGFR degradation in lung adenocarcinoma and modulates p38 activation in intestine: the versatile adjuvant for gefitinib therapy. PLoS One. 6(8):e23756.
4. Riis JL, et al. (2011) CCL27 expression is regulated by both p38 MAPK and IKKβ signalling pathways. Cytokine. 56(3):699-707.

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