

MKK4 Protein, Mouse (sf9, His-GST)

Cat. No.:	HY-P74749
Synonyms:	Dual specificity mitogen-activated protein kinase kinase 4; MAPKK 4; SEK1; JNKK 1
Species:	Mouse
Source:	Sf9 insect cells
Accession:	P47809 (A2-D397)
Gene ID:	26398
Molecular Weight:	Approximately 65 kDa

PROPERTIES

Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of 20 mM Tris, 500 mM NaCl, pH 8.5. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

MKK4, a dual specificity protein kinase, plays a crucial role as an essential component in the MAP kinase signal transduction pathway, specifically in the stress-activated protein kinase/c-Jun N-terminal kinase (SAP/JNK) signaling cascade. Alongside MAP2K7/MKK7, MKK4 is one of the few known kinases that directly activate stress-activated protein kinases, including MAPK8/JNK1, MAPK9/JNK2, and MAPK10/JNK3, by phosphorylating the Thr-Pro-Tyr motif. While both MKK4 and MAP2K7/MKK7 contribute to JNK activation through phosphorylation, they exhibit distinct preferences for phosphorylation sites within this motif. MKK4 shows a preference for phosphorylating the Tyr residue, whereas MAP2K7/MKK7 prefers the Thr residue. The phosphorylation of the Thr residue by MAP2K7/MKK7 appears to be a prerequisite for JNK activation, particularly in response to pro-inflammatory cytokines. Interestingly, other stimuli activate both MKK4 and MAP2K7/MKK7, working synergistically to phosphorylate JNKs. MKK4's involvement extends to the maintenance of peripheral lymphoid homeostasis and participation in the mitochondrial death signaling pathway, leading to apoptosis. Notably, while MAP2K7/MKK7 exclusively activates JNKs, MKK4 additionally activates the p38 MAPKs MAPK11, MAPK12, MAPK13, and MAPK14.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA