

MAP2K4 Protein, Human (P. pastoris, His-GST)

Cat. No.:	HY-P700589
Synonyms:	MAP2K4; mitogen-activated protein kinase kinase 4; SERK1; dual specificity mitogen-activated protein kinase kinase 4; JNKK1; MEK4; MKK4; PRKMK4; MEK 4; MAPKK 4; SAPK kinase 1; MAPK/ERK kinase 4; SAPK/ERK kinase 1; MAP kinase kinase 4; JNK-activated kinase 1; JNK activating kinase 1; JNK-activating kinase 1; c-Jun N-terminal kinase kinase 1; stress-activated protein kinase kinase 1; JNKK; SEK1; MAPKK4; SAPKK1; SAPKK-1;
Species:	Human
Source:	P. pastoris
Accession:	P45985 (A2-D399)
Gene ID:	6416
Molecular Weight:	71.5 kDa

PROPERTIES

AA Sequence	<pre> A A P S P S G G G G S G G G S G S G T P G P V G S P A P G H P A V S S M Q G K R K A L K L N F A N P P F K S T A R F T L N P N P T G V Q N P H I E R L R T H S I E S S G K L K I S P E Q H W D F T A E D L K D L G E I G R G A Y G S V N K M V H K P S G Q I M A V K R I R S T V D E K E Q K Q L L M D L D V V M R S S D C P Y I V Q F Y G A L F R E G D C W I C M E L M S T S F D K F Y K Y V Y S V L D D V I P E E I L G K I T L A T V K A L N H L K E N L K I I H R D I K P S N I L L D R S G N I K L C D F G I S G Q L V D S I A K T R D A G C R P Y M A P E R I D P S A S R Q G Y D V R S D V W S L G I T L Y E L A T G R F P Y P K W N S V F D Q L T Q V V K G D P P Q L S N S E E R E F S P S F I N F V N L C L T K D E S K R P K Y K E L L K H P F I L M Y E E R A V E V A C Y V C K I L D Q M P A T P S S P M Y V D </pre>
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 Tris/PBS-based buffer, 6% Trehalose, pH 8.0.
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

MAP2K4, a dual specificity protein kinase, serves as a pivotal component in the MAP kinase signal transduction pathway, particularly in the stress-activated protein kinase/c-Jun N-terminal kinase (SAP/JNK) signaling cascade. Teaming up with MAP2K7/MKK7, MAP2K4 stands out as one of the few known kinases capable of directly activating stress-activated protein kinases, including MAPK8/JNK1, MAPK9/JNK2, and MAPK10/JNK3, through phosphorylation of the Thr-Pro-Tyr motif. While both MAP2K4/MKK4 and MAP2K7/MKK7 contribute to JNK activation, their preferences for phosphorylation sites within this motif differ. MAP2K4 favors phosphorylation of the Tyr residue, whereas MAP2K7/MKK7 prefers the Thr residue. The phosphorylation of the Thr residue by MAP2K7/MKK7 appears crucial for JNK activation, especially in response to pro-inflammatory cytokines, while other stimuli engage both MAP2K4/MKK4 and MAP2K7/MKK7 in a synergistic phosphorylation of JNKs. Notably, MAP2K4 plays an essential role in maintaining peripheral lymphoid homeostasis and participates in the mitochondrial death signaling pathway, leading to apoptosis. While MAP2K7/MKK7 exclusively activates JNKs, MAP2K4/MKK4 goes a step further by additionally activating the p38 MAPKs MAPK11, MAPK12, MAPK13, and MAPK14.

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

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