JNK1 Protein, Human (sf9, GST)

Cat. No.:	HY-P73848
Synonyms:	Mitogen-activated protein kinase 8; MAPK 8; JNK-46; JNK1; PRKM8
Species:	Human
Source:	Sf9 insect cells
Accession:	P45983 (M1-R427)
Gene ID:	5599
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	Solution.
Formulation	Supplied as a 0.2 μm filtered solution of 50 mM Tris, 100 mM NaCl, pH 8.0, 25% glycerol.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	N/A.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice

DESCRIPTION

Background

JNK1, a serine/threonine-protein kinase, intricately regulates diverse cellular processes, including cell proliferation, differentiation, migration, transformation, and programmed cell death. Activation of the stress-activated protein kinase/c-Jun N-terminal kinase (SAP/JNK) signaling pathway, stimulated by extracellular factors such as pro-inflammatory cytokines or physical stress, involves the phosphorylation and activation of JNK1 by the dual specificity kinases MAP2K4/MKK4 and MAP2K7/MKK7. In the ensuing cascade, JNK1 phosphorylates key transcription factors, particularly components of AP-1 such as JUN, JDP2, and ATF2, thereby modulating AP-1 transcriptional activity. JNK1 also exerts regulatory control over replication initiation by phosphorylating the replication licensing factor CDT1, disrupting its interaction with the histone H4 acetylase HBO1. This event impedes the acetylation required for replication origins. Additionally, JNK1 plays a pivotal role in apoptosis induction by phosphorylating critical regulatory factors, including p53/TP53 and Yes-associates protein YAP1. Its involvement in diverse cellular pathways encompasses contributions to T-cell differentiation, survival of erythroid cells, autophagy activation, and regulation of microtubule dynamics in neurons. JNK1's extensive substrate repertoire includes heat shock factor protein 4 (HSF4), the deacetylase SIRT1, ELK1, the E3 ligase ITCH, the circadian clock regulator CLOCK-BMAL1, and the heat shock transcription factor HSF1, among others. Notably, JNK1 isoforms exhibit distinct binding patterns, with beta-1 preferentially binding to c-Jun, while alpha-1, alpha-2, and beta-2 display a similar low level of binding

	to both c-Jun and ATF2, although phosphorylation efficiency remains consistent across isoforms.

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