

DUSP14 Protein, Human, Recombinant (His & MBP)

General Information

Synonyms:	MKP6;MKP-L;dual specificity phosphatase 14
Protein Construction:	A DNA sequence encoding the human DUSP14 (O95147) (Met 1 -His 191) was fused with an N-terminal polyhistidine-tagged MBP tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	O95147
Molecular Weight:	65 kDa (predicted); 60 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 88 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.5. 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

Dual specific phosphatase 14 / MAP-kinase phosphatase-6 (DUSP14 / MKP6) is a member of Dual-specificity phosphatases that is a subclass of protein tyrosine phosphatases (PTP) families that can dephosphorylate both phosphotyrosine and phosphoserine / phosphothreonine residues in substrates. Unlike many other DUSPs, DUSP14 only contains a catalytic domain within the C-terminal region. In signal transduction, DUSP14 has been considered as negative regulator of the mitogen-activated protein kinase (MAPK) / extracellular signal-regulated

kinase 1 / 2 (ERK 1 / 2) pathway. DUSP14 phosphatase activity has been confirmed to be inhibited by PTP inhibitor IV. PTP inhibitor binds to the catalytic site of DUSP14. PTP inhibitor IV effectively and specifically inhibited DUSP14-mediated dephosphorylation of JNK, a member of the mitogen-activated protein kinase (MAPK) family through dephosphorylation of both the Ser / Thr and Tyr residues of MAPKs.

Reference

Yoshihara Y, et al. (1996) Overlapping and differential expression of BIG-2, BIG-1, TAG-1, and F3: four members of an axon-associated cell adhesion molecule subgroup of the immunoglobulin superfamily. *J Neurobiol.* 28 (1): 51-69.

Klinger S, et al. (2008) Increasing GLP-1-induced beta-cell proliferation by silencing the negative regulators of signaling cAMP response element modulator-alpha and DUSP14. *Diabetes.* 57 (3): 584-93.

Park JE, et al. (2009) PTP inhibitor IV protects JNK kinase activity by inhibiting dual-specificity phosphatase 14 (DUSP14). *Biochem Biophys Res Commun.* 387 (4): 795-9.

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