

# Human MAPK12, C-His Tag Protein

HA210513



<b>Product name:</b>	Human MAPK12, C-His Tag
<b>Species reactivity:</b>	Human
<b>Bio-Activity:</b>	Testing in progress.
<b>Protein construction description:</b>	A DNA sequence encoding the human MAPK12 protein (P53778) (Met 1-Leu 367) was expressed with a His tag at the C-terminus.

**Background:** Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway. MAPK12 is one of the four p38 MAPKs which play an important role in the cascades of cellular responses evoked by extracellular stimuli such as pro-inflammatory cytokines or physical stress leading to direct activation of transcription factors such as ELK1 and ATF2. Accordingly, p38 MAPKs phosphorylate a broad range of proteins and it has been estimated that they may have approximately 200 to 300 substrates each. Some of the targets are downstream kinases such as MAPKAPK2, which are activated through phosphorylation and further phosphorylate additional targets. Plays a role in myoblast differentiation and also in the down-regulation of cyclin D1 in response to hypoxia in adrenal cells suggesting MAPK12 may inhibit cell proliferation while promoting differentiation. Phosphorylates DLG1. Following osmotic shock, MAPK12 in the cell nucleus increases its association with nuclear DLG1, thereby causing dissociation of DLG1-SFPQ complexes. This function is independent of its catalytic activity and could affect mRNA processing and/or gene transcription to aid cell adaptation to osmolarity changes in the environment. Regulates UV-induced checkpoint signaling and repair of UV-induced DNA damage and G2 arrest after gamma-radiation exposure. MAPK12 is involved in the regulation of SLC2A1 expression and basal glucose uptake in L6 myotubes; and negatively regulates SLC2A4 expression and contraction-mediated glucose uptake in adult skeletal muscle. C-Jun (JUN) phosphorylation is stimulated by MAPK14 and inhibited by MAPK12, leading to a distinct AP-1 regulation. MAPK12 is required for the normal kinetochore localization of PLK1, prevents chromosomal instability and supports mitotic cell viability. MAPK12-signaling is also positively regulating the expansion of transient amplifying myogenic precursor cells during muscle growth and regeneration.

<b>Purity:</b>	>95% as determined by SDS-PAGE.
<b>Endotoxin:</b>	Less than 1.0 EU per µg by the LAL method.
<b>Fragment region:</b>	MAPK12 (1-367)
<b>Source:</b>	E.coli
<b>Accession:</b>	P53778
<b>Predicted molecular mass:</b>	43.6 kD
<b>Formulation:</b>	Lyophilized from a 0.2 µm filtered solution of PBS, pH7.4, 5% Trehalose, 5% mannitol.
<b>Reconstitution:</b>	Reconstitute at 250 µg/ml in sterile water.
<b>Storage:</b>	Please avoid repeated freeze-thaw cycles. Samples are stable for up to twelve months from date of receipt at -20°C to -80°C. It is recommended that aliquot the reconstituted solution to minimize freeze-thaw cycles.

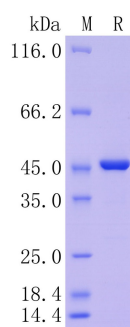
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**Fig1:** Protein on SDS-PAGE under reducing (R) condition.

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