

## TAOK2 Protein, Human (Sf9)

<b>Cat. No.:</b>	HY-P701642
<b>Synonyms:</b>	TAOK2; Serine/threonine-protein kinase TAO2; Kinase from chicken homolog C; hKFC-C; Prostate-derived sterile 20-like kinase 1; PSK-1; PSK1; Prostate-derived STE20-like kinase 1; Thousand and one amino acid protein kinase 2
<b>Species:</b>	Human
<b>Source:</b>	Sf9 insect cells
<b>Accession:</b>	Q9UL54 (M1-K314)
<b>Gene ID:</b>	9344
<b>Molecular Weight:</b>	

### PROPERTIES

<b>Appearance</b>	Solution.
<b>Formulation</b>	Supplied as a 0.22 µm filtered solution of 50 mM Tris-HCl, pH7.5, 200 mM NaCl, 20% glycerol.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	Please use rapid thawing with running water to thaw the protein.
<b>Storage &amp; Stability</b>	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.
<b>Shipping</b>	Shipping with dry ice.

### DESCRIPTION

<b>Background</b>	<p>TAOK2, a serine/threonine-protein kinase, engages in diverse cellular processes, including membrane blebbing, apoptotic bodies formation, DNA damage response, and the MAPK14/p38 MAPK stress-activated MAPK cascade. It exhibits a broad substrate specificity, phosphorylating itself, MBP, activated MAPK8, MAP2K3, MAP2K6, and tubulins. TAOK2 activates the MAPK14/p38 MAPK signaling pathway by specifically activating and phosphorylating the upstream MAP2K3 and MAP2K6 kinases. In the context of the DNA damage response, TAOK2 contributes to the G2/M transition DNA damage checkpoint by orchestrating the activation of the p38/MAPK14 stress-activated MAPK cascade, potentially through the phosphorylation of upstream MAP2K3 and MAP2K6 kinases. While isoform 1 participates in apoptotic morphological changes, including cell contraction, membrane blebbing, and apoptotic bodies formation, isoform 2 is specifically involved in PCDH8 endocytosis, triggered by homophilic interactions between PCDH8 extracellular domains. Isoform 2 phosphorylates and activates MAPK14/p38 MAPK, leading to PCDH8 endocytosis and CDH2 cointernalization. Both isoforms contribute to MAPK14 phosphorylation. Moreover, isoform 1, but not isoform 2, modulates microtubule organization and stability, independent of its kinase activity, and prevents MAP3K7-mediated activation of CHUK, thereby inhibiting NF-kappa-B activation but not that of MAPK8/JNK. Additionally, isoform 2 is implicated in the osmotic stress-MAPK8 pathway.</p>
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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