

DYRK1A Protein, Human

Cat. No.:	HY-P701667
Synonyms:	DYRK1A; Dual specificity tyrosine-phosphorylation-regulated kinase 1A; Dual specificity YAK1-related kinase; HP86; Protein kinase minibrain homolog; MNBH; hMNB
Species:	Human
Source:	E. coli
Accession:	Q13627 (S127-E485)
Gene ID:	1859
Molecular Weight:	

PROPERTIES

Appearance	Solution.
Formulation	Supplied as a 0.22 µm filtered solution of 50 mM Tris-HCl, pH7.5, 200 mM NaCl, 20% glycerol.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	Please use rapid thawing with running water to thaw the protein.
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	<p>DYRK1A, a dual-specificity kinase endowed with both serine/threonine and tyrosine kinase activities, plays a pivotal role in various cellular processes. It exhibits a substrate preference for proline at position P+1 and arginine at position P-3, showcasing its specificity in substrate recognition. In the context of DNA damage response, DYRK1A emerges as a key participant in double-strand breaks repair, phosphorylating RNF169 to enhance its capability to impede TP53BP1 accumulation at DSB sites, thereby facilitating homologous recombination repair. Moreover, DYRK1A acts as a positive regulator of transcription by functioning as a CTD kinase, orchestrating the phosphorylation of the C-terminal domain of the large subunit of RNA polymerase II (POLR2A). This kinase may contribute to a signaling pathway governing nuclear functions related to cell proliferation and modulates alternative splicing through the phosphorylation of the splice factor SRSF6. With pro-survival functions, DYRK1A negatively regulates apoptosis, promoting cell survival under genotoxic stress by phosphorylating SIRT1, consequently inhibiting p53/TP53 activity. Additionally, DYRK1A targets SEPTIN4, SEPTIN5, and SF3B1 for phosphorylation at 'Thr-434,' further expanding its regulatory repertoire.</p>
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Caution: Product has not been fully validated for medical applications. For research use only.

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