Recombinant CDK3 protein (His tag)

Catalog Number	544812
Synonyms	Cell division protein kinase 3
Species	Human
Expression System	E. coli
Accession	Q00526
Molecular Weight	Predictes a molecular mass of 36.70 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 37 kDa band.

Product Information

Sequence Region	1-305
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>90%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 1-305 aa (Q00526) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Human Cyclin-dependent kinase 3 (CDK3) fragment (amino acids 1-305) is a high-purity protein designed for studying cell cycle regulation. This fragment encompasses the complete protein kinase domain, making it an ideal tool for investigating kinase activity, substrate interactions, and mechanisms driving G0-G1 and G1-S transitions in eukaryotic cells. Cyclin-dependent kinase 3 (CDK3) is a serine/threonine-protein kinase essential for controlling the eukaryotic cell cycle, particularly in G0-G1 and G1-S phase transitions. It interacts with cyclin-C during interphase and phosphorylates key substrates such as histone H1, ATF1, RB1, and CABLES1. Phosphorylation of ATF1 enhances its transactivation and transcriptional activities, promoting cell proliferation and transformation. CDK3/cyclin-C-mediated RB1 phosphorylation is critical for the G0-G1 transition, while CDK3 also facilitates G1-S progression by activating E2F transcription factors (E2F1, E2F2, E2F3) independently of RB1. These functions highlight CDK3's significance in cell cycle control and its potential relevance in proliferative disorders.