Recombinant CDK4 protein (His tag)

Catalog Number	544389
Synonyms	Cell division protein kinase 4; PSK-J3
Species	Human
Expression System	E. coli
Accession	P11802
Molecular Weight	Predictes a molecular mass of 35.25 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 35 kDa band.

Product Information

Sequence Region	2-303
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>89%, 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 2-303 aa (P11802) 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 4 (CDK4) fragment (amino acids 2-303) is a high-purity protein encompassing the complete Protein kinase domain. This fragment serves as an essential tool for investigating G1/S cell-cycle transition mechanisms, RB protein family regulation, and kinase activity studies in controlled experimental settings. Cyclin-dependent kinase 4 (CDK4) is a Ser/Thr-kinase that forms complexes with cyclin D to regulate cell-cycle progression during G1/S transition. These complexes phosphorylate and inhibit retinoblastoma (RB) family proteins, including RB1, enabling E2F transcription factor dissociation and subsequent expression of genes required for G1 phase progression. CDK4 also phosphorylates SMAD3 in a cell-cycle-dependent manner, repressing its transcriptional activity. The protein localizes to cytoplasm when non-complexed, forms cyclin D-CDK4 complexes in the cytoplasm during G1 phase, and translocates to the nucleus membrane and nucleus during G1 to S phase transition, where it colocalizes with RB1. CDK4 functions as a major integrator of mitogenic and antimitogenic signals and participates in the ternary cyclin D/CDK4/CDKN1B complex required for nuclear translocation and activity.