



LD Biopharma, Inc.
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Tel: 858-876-8266
<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human CDK4 Protein
Catalog Number: hRP-0832
Manufacturer: LD Biopharma, Inc.

Introduction

The protein encoded by human cyclin-dependent kinase 4 (CDK4) gene is a member of the Ser/Thr protein kinase family. This protein is highly similar to the gene products of *S. cerevisiae* cdc28 and *S. pombe* cdc2. It is a catalytic subunit of the protein kinase complex that is important for cell cycle G1 phase progression. The activity of CDK4 kinase is restricted to the G1-S phase, which is controlled by the regulatory subunits D-type cyclins and CDK inhibitor p16(INK4a). This kinase was shown to be responsible for the phosphorylation of retinoblastoma gene product (Rb). Mutations in this gene as well as in its related proteins including D-type cyclins, p16(INK4a) and Rb were all found to be associated with tumorigenesis of a variety of cancers. Recent data indicated that immunostaining data for various tumor tissues using anti-CDK4 specific antibodies can provide valuable diagnostic index for guiding cancer treatment.

Full-length human CDK4 (303 aa) gene was constructed with 15 aa N-terminal T7 tag and expressed in *E.coli* as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: CDK4 (CMM3; PSK-J3)
Accession Number: NP_000066
Species: Human
Size: 50 µg / Vial
Composition: 0.5 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, arginine, DTT and Glycerol.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Yoshida,A., et al., *MDM2 and CDK4 immunohistochemical coexpression in high-grade*



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osteosarcoma: correlation with a dedifferentiated subtype Am. J. Surg. Pathol. 36 (3), 423-431 (2012)

Thway,K., et al., *Diagnostic utility of p16, CDK4, and MDM2 as an immunohistochemical panel in distinguishing well-differentiated and dedifferentiated liposarcomas from other adipocytic tumors.* Am. J. Surg. Pathol. 36 (3), 462-469 (2012)

Lin,Y., et al., *Cyclin-dependent kinase 4 is a novel target in microRNA-195-mediated cell cycle arrest in bladder cancer cells.* FEBS Lett. 586 (4), 442-447 (2012)

Applications

1. May be used for in vitro CDK4 mediated tumogenesis pathway regulation study with intracellular delivery of this protein.
2. As soluble / native protein, may be used as enzymatic substrate protein for kinase and ubiquitin assay development.
3. May be used for mapping CDK4 protein-protein interaction.
4. Potential cancer diagnostic biomarker protein.
5. May be used as antigen for specific antibody development.

Quality Control

1. Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGEFMATSRYEPVAEIGVGAYGTVYKARDPHSGHFVALKSVRVPNGGGGGGL
PISTVREVALLRLEAFEHVNVRLMDVCATSRTDREIKVTLVFEHVDQDLRTYLDKAPPPGLP
AETIKDLMRQFLRGLDFLHANCIVHRDLKPENILVTSGGTVKLDLDFGLARIYSYQMALTPVVVT
LWYRAPEVLLQSTYATPVDMWSVGCIFAEMFRRKPLFCGNSEADQLGKIFDLIGLPPEDDWPRD
VSLPRGAFPPRGPRPVQSVPEMEESGAQLLLEMLTFNPHKRISAFRALQHSYLHKDEGNPE