Data Sheet (Cat.No.TMPY-04548)

TargetMol

CDK4 Protein, Human, Recombinant (GST)

General Information

Synonyms: CMM3;PSK-J3;cyclin-dependent kinase 4

Protein Construction: A DNA sequence encoding the human CDK4 (NP_000066.1) (Met 1-Glu 303) was fused with the GST tag at the N-terminus. Predicted N terminal: Met

Species: Human

Expression Host: Baculovirus Insect Cells

Accession: P11802

Molecular Weight: 60 kDa (predicted); 55 kDa (reducing conditions)

QC Testing

Biological Activity: No Kinase Activity

Purity: > 80 % as determined by SDS-PAGE

Endotoxin: < 1.0 EU/μg of the protein as determined by the LAL method.

Formulation: Lyophilized from a solution filtered through a 0.22 μm filter, containing 50 mM Tris, 100 mM NaCl, 10% gly, 0.5 mM PMSF, pH 8.0.Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

CDK4 is a member of the Ser/Thr protein kinase family. It 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 is restricted to the G1-S phase, which is controlled by the regulatory subunits D-type cyclins and CDK inhibitor p16(INK4a). CDK4 was shown to be responsible for the phosphorylation of retinoblastoma gene product. CDK4 is the ser/Thr-kinase component of cyclin D-CDK4 (DC) complexes that

phosphorylate and inhibit members of the retinoblastoma (RB) protein family including RB1 and regulate the cell-cycle during G(1)/S transition. Phosphorylation of RB1 allows dissociation of the transcription factor E2F from the RB/E2F complexes and the subsequent transcription of E2F target genes which are responsible for the progression through the G(1) phase. Hypophosphorylates RB1 in early G(1) phase. Cyclin D-CDK4 complexes are major integrators of various mitogenenic and antimitogenic signals. CDK4 has been shown to be mutated in some types of cancer, whilst a chromosomal rearrangement can lead to Cdk6 overexpression in lymphoma, leukemia and melanoma.Cancer ImmunotherapyImmune CheckpointImmunotherapyTargeted Therapy

Reference

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Lamphere L,et al.(1997) Interaction between Cdc37 and Cdk4 in human cells. Oncogene. 14(16): 1999-2004.
Dai K,et al.(1996) Physical interaction of mammalian CDC37 with CDK4. J Biol Chem. 271(36): 22030-4.
Sugimoto M,et al.(1999) Regulation of CDK4 activity by a novel CDK4-binding protein, p34SEI-1. Genes Dev. 13(22): 3027-33.