



Recombinant Protein Technical Manual

Recombinant Human CDK2 Protein (Baculovirus, His Tag)

RPES1696

Product Data:

Product SKU: RPES1696

Size: 50µg

Species: Human

Expression host: Baculovirus-Insect Cells

Uniprot: NP_001789.2

Protein Information:

Molecular Mass: 35 kDa

AP Molecular Mass:

Tag: C-His

Bio-activity:

Purity: > 85 % as determined by reducing SDS-PAGE.

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

Storage: Lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.

Shipping: This product is provided as lyophilized powder which is shipped with ice packs.

Formulation: Lyophilized from sterile 50mM Tris, 100mM NaCl, pH 8.0, 10% glycerol

Reconstitution: Please refer to the printed manual for detailed information.

Application:

Synonyms: Cyclin-Dependent Kinase 2; Cell Division Protein Kinase 2; p33 Protein Kinase; CDK2; CDKN2

Immunogen Information:

Sequence: Met 1-Leu 298

Background:

CDK2 is a member of the Ser/Thr protein kinase family. This protein kinase is highly similar to the gene products of *S. cerevisiae* cdc28, and *S. pombe* cdc2. It is a catalytic subunit of the cyclin-dependent protein kinase complex, whose activity is restricted to the G1-S phase, and essential for cell cycle G1/S phase transition. Cdk (cyclin-dependent kinases) are heteromeric serine/threonine kinases that control progression through the cell cycle in concert with their regulatory subunits, the cyclins. Cdk is constitutively expressed and is regulated by several kinases and phosphatases, including Wee1, CDK-activating kinase and Cdc25 phosphatase. Although there are 12 different cdk genes, only 5 have been shown to directly drive the cell cycle (Cdk1, -2, -3, -4, and -6). Following extracellular mitogenic stimuli, cyclin D gene expression is upregulated. Cdk4 forms a complex with cyclin D and phosphorylates Rb protein, leading to liberation of the transcription factor E2F. E2F induces transcription of genes including cyclins A and E, DNA polymerase and thymidine kinase. Cdk4-cyclin E complexes form and initiate G1/S transition. Subsequently, Cdk1-cyclin B complexes form and induce G2/M phase transition. Cdk1-cyclin B activation induces the breakdown of the nuclear envelope and the initiation of mitosis. CDK2 associates with and is regulated by the regulatory subunits of the complex including cyclin A or E, CDK inhibitor p21Cip1 (CDKN1A) and p27Kip1 (CDKN1B). Its activity is also regulated by its protein phosphorylation. CDK2 is involved in the control of the cell cycle. It also interacts with cyclins A, B1, B3, D, or E. Activity of CDK2 is maximal during S phase and G2.