CDK2/CyclinE1, GST-Tag Recombinant

Catalog: 40102
Lot: 230215-G

Product Information

Description:	Recombinant human complex of CDK2 (cyclin dependent kinase 2), encompassing amino acids 2-298(end) and cyclinE1, encompassing amino acids 2-410(end). Both CDK2 and cyclinE1 constructs contain an N-terminal GST-tag, followed by a Thrombin Cleavage Site. The proteins were co-expressed in Sf9 cells and purified.
Background:	CDK2 (cyclin dependent kinase 2), also known as cell division protein kinase 2, is a member of the serine/threonine cyclin-dependent protein kinase family, and it is involved in cell cycle. CDK2 is regulated by phosphorylation and can associate with either cyclin E during G1 phase and cyclin A during S phase. Its association with cyclins induces a conformational change that results in a dramatic increase of the kinase activity. Cyclin levels vary during the cell cycle, which allow cyclins to regulate CDK activity in the cell. Dissociation of the complex returns CDK to its basal activity, and CDK is degraded by ubiquitin-mediated proteolysis. CDK2 can phosphorylate several proteins, being part of DNA damage, protein degradation, signal transduction, and other crucial cellular pathways. Lack of regulation in cell cycle can result in cancer. In general, CDK2 is not itself upregulated or hyperactive in cancer, and its abnormal activity comes from dysregulation in its binding partners. For instance, cyclin E is overexpressed and/or has abnormal activity in many cancers, including breast, lung cancer and leukemia. The development of inhibitors specific for CDK2 has been difficult, as CDKs have similar active sites, and for instance inhibition of CDK1 can be highly detrimental. The understanding of the mechanisms involved in cell cycle regulation, and its control via the use of small molecule inhibitors alone or in combination therapy will open new therapeutic avenues for the treatment of cancer and neurodegenerative diseases.
Species:	Human
Construct:	CDK2 (GST-2-298(end)) / CyclinE1 (GST-2-410(end))
Concentration:	0.46 mg/ml
Expression System:	Sf9
Purity:	80%
Format:	Aqueous buffer solution.
Formulated In:	40 mM Tris-HCl, pH 8.0, 110 mM NaCl, 2.2 mM KCl, 0.04% Tween-20, and 20% glycerol
MW:	CDK2: 61 kDa; Cyclin E1: 74 kDa
Genbank Accession:	CDK2: NM_001798; Cyclin E1: NM_001238
Stability:	At least 6 months at -80°C.
Storage:	-80°C
Instructions for Use:	Thaw on ice and gently mix prior to use. DO NOT VORTEX. Perform a quick spin before opening. Aliquot into small volumes and flash freeze for long term storage. Avoid multiple freeze/thaw cycles.
Specific Activity:	84 pmol/min/µg
Assay Conditions:	Assay was done according to Chemi-Verse™ CDK2/CyclinE1 Kinase Assay Kit (BPS Bioscience #82228) with various amounts of CDK2/CyclinE1.
Applications:	Useful for the study of enzyme kinetics, screening inhibitors, and selectivity profiling.

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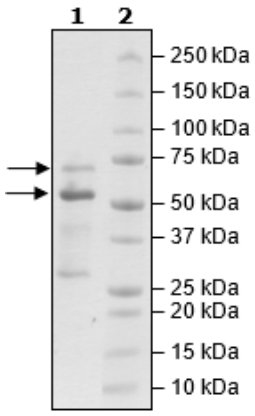
Quality Control Data

4-20% SDS-PAGE Coomassie Staining



CDK2/CyclinE1 Activity