# PLK1 (Human), Active

## Full-length recombinant protein expressed in Sf9 cells

## Cat# CY-SPP41

**Lot No. G288-1**
**5 µg 0.1 µg/µl**

**Background:**

PLK1 is a member of the Polo-Like Kinase family that localizes to centrosomes or spindle pole bodies and undergoes dramatic subcellular relocation during the cell cycle. Deregulated activities of PLKs often result in abnormalities in centrosome duplication, maturation, and/or microtubule dynamics (1). PLKs also regulate the function of the Golgi complex. Deregulated expression of human PLK1 is strongly correlated with the development of many types of malignancies, and ectopic expression of PLK1 dominant negative protein leads to rapid cell death (2).

**Product Description:**

Recombinant full-length human PLK1 was expressed using baculovirus in Sf9 insect cells using an N-terminal His tag. The gene accession number is NM_005030.

**Gene Aliases:**

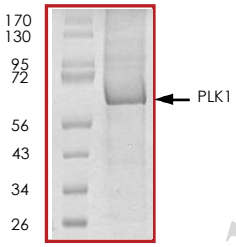
STPK13

**Formulation:**

Recombinant protein stored in 50mM Tris-HCl, pH 7.5, 150mM NaCl, 0.25mM DTT, 0.1mM EGTA, 0.1mM EDTA, 0.1mM PMSF, 25% glycerol.

**Purity & Molecular Weight:**

The purity was determined to be >75% by densitometry. Approx. MW 70kDa.




**Storage:**

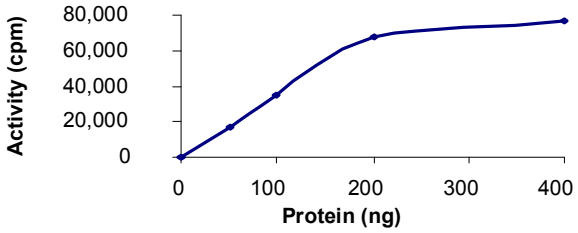
Store product at –70 °C. For optimal storage, aliquot target into smaller quantities after centrifugation and store at recommended temperature. For most favorable performance, avoid repeated handling and multiple freeze/thaw cycles.

**Stability:**

1 year at –70 °C from date of shipment.

**Specific Activity:**

The specific activity was determined to be 17 nmol /min/mg as per Activity Assay Protocol.




**Activity Assay Protocol:**

Assay activity of the kinase in a 25 µL reaction consisting of 5 µL of 5 X Kinase Assay Buffer, 5 µL of 1 mg/ml the Substrate Solution, 5 µL of diluted kinase and 5 µL of 250 µM ATP solution containing [gamma $^{32}$P] ATP (0.167 µCi/µL). Start the reaction by adding the ATP solution. Incubate for 15 minutes at 30°C. Terminate the reaction by spotting 20 µL of the reaction mixture onto phosphocellulose P81 paper. Air-dry the P81 paper and sequentially wash 4 times for approximately 10 minutes each in 1% phosphoric acid with constant gentle stirring. Count the P81 paper in a liquid scintillation counter.

**Substrate Solution:**

Dephospho-Casein diluted in distilled $H_2O$ to a final concentration of 1mg/ml.

**5 X Kinase Assay Buffer:**

25mM MOPS, pH 7.2, 12.5mM $\beta$-glycerol-phosphate, 25mM $MgC1_2$, 5mM EGTA, 2mM EDTA. Add 0.25mM DTT to Kinase Assay Buffer prior to use.

**References:**

1.Nigg, EA. et al: Dynamic changes in nuclear architecture during mitosis: on the role of protein phosphorylation in spindle assembly and chromosome segregation. Exp Cell Res. 1996 Dec 15;229

2.Dai, W. et al: Polo-like kinases and the microtubule organization center: targets for cancer therapies. Prog Cell Cycle Res. 2003;5:327-34..

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