CK2 alpha1 (Human), Active

Full-length recombinant protein expressed in Sf9 cells

Cat# CY-SPC70

Lot No. B087-1
5 µg 0.1 µg/µl

Background:

CK2 α 1 is a serine-threonine protein kinase whose targets include many critical regulators of cellular growth. It is highly expressed in a lymphopro-liferative disease of cattle and in many human cancers. Overexpression of the CK2 catalytic subunit in lymphocytes of transgenic mice leads to T cell lymphoma (1). The highest CK2 α 1 activity is found in mouse testicles and brain, followed by spleen, liver, lung, kidney and heart (2).

Product Description:

Recombinant full-length human CK2 α 1 was expressed by baculovirus in Sf9 insect cells using a N-terminal GST tag. The gene accession number is NM_001895.

Gene Aliases:

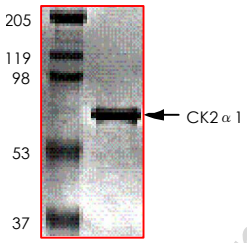
CSNK2A1, CKII

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 >95% by densitometry. Approx. MW 70kDa.



Storage:

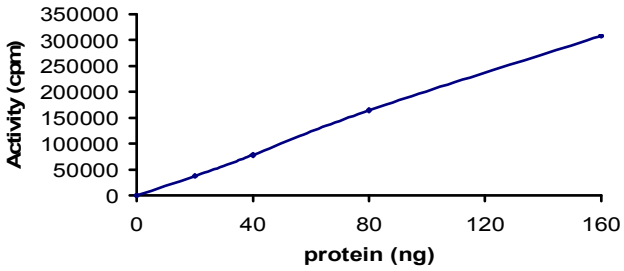
Store product at –70 °C. For optimal storage, aliquot target into smaller quantities after centrifugation and store at recommended temperature. For most favorable performance, avoid repeated handling and multiple freeze/thaw cycles.

Stability:

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

Specific Activity:

The specific activity was determined to be 107 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, 10 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:

Casein substrate diluted in distilled H_2O to a final concentration of 1 mg/ml.

5 X Kinase Assay Buffer:

25mM MOPS, 12.5mM β-glycerol-phosphate, 25mM $MgCl_2$, 5mM EGTA, 2mM EDTA. Add 0.25mM DTT to Kinase Assay Buffer prior to use

References:

1.Rifkin, IR. et al: Acceleration of lymphoproliferative and autoimmune disease by transgenic protein kinase CK2 alpha. J Immunol. 1998 Nov 15;161(10):5164-70.

2.Guerra B. et al: Protein kinase CK2: evidence for a protein kinase CK2beta subunit fraction, devoid of the catalytic CK2alpha subunit, in mouse brain and testicles. FEBS Lett. 1999 Dec 3;462(3):353-7.

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