CAMK1 (Mouse), Active

Full-length recombinant protein expressed in E-coli cells

Cat# CY-SPC07

Lot No. K270-1
5 µg 0.1 µg/µl

Background:

CAMK1 is a serine/threonine protein kinase that is a member of the multifunctional calcium/calmodulin-dependent protein kinase family. CAMK1 is ubiquitously expressed and phosphorylates a number of proteins including SYN1, SYN2, CREB and CFTR. In addition, Numb family of proteins may also be intracellular targets for CAMK1, and they may also be regulated by phosphorylation-dependent interaction with 14-3-3 protein (1). CAMK1 also plays an important role in the trafficking of HDAC7 between the cytoplasm and the nucleus. CAMK1 phosphorylates HDAC7 on multiple sites that lead to alteration in localization of HDAC7 (2).

Product Description:

Recombinant full-length mouse CAMK1 was expressed in E-coli cells using an N-terminal GST tag. The gene accession number is NM_133926.

Gene Aliases:

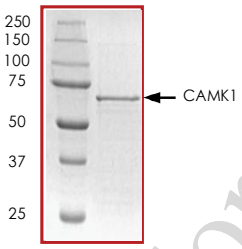
AI505105; D6Ertd263e

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 >90% by densitometry. Approx. MW 70kDa.



Storage:

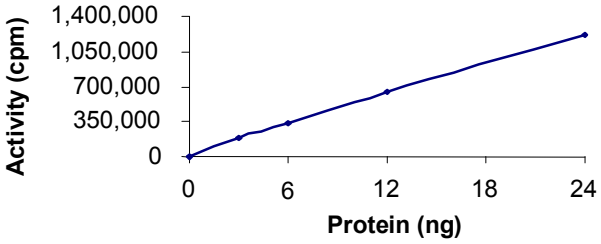
Store product at –70 °C. For optimal storage, aliquot target into smaller quantities after centrifugation and store at recommended temperature. For most favorable performance, avoid repeated handling and multiple freeze/thaw cycles.

Stability:

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

Specific Activity:

The specific activity was determined to be 3214 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, 7.5 µL of 1 mg/ml the Substrate Solution, 2.5 µL of 5mM $CaCl_2$ solution containing 0.75 mg Calmodulin, 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:

Autocamtide-2 synthetic peptide substrate (KKALRRQETVDAL-amide) diluted in distilled H_2O to a final concentration of 1mg/ml.

5 X Kinase Assay Buffer:

25mM MOPS, pH 7. 2, 12.5mM β -glycerol-phosphate, 25mM $MgC1_2$, 5mM EGTA, 2mM EDTA. Add 0.25mM DTT to Kinase Assay Buffer prior to use.

References:

1.Tokumitsu, H. et al: Phosphorylation of Numb family proteins. Possible involvement of Ca2+/calmodulin-dependent protein kinases. J Biol Chem. 2005 Oct 21;280(42):35108-18.

2.Gao, C. et al: CRM1 mediates nuclear export of HDAC7 independently of HDAC7 phosphorylation and association with 14-3-3s. FEBS Lett. 2006 Sep 18;580(21):5096-104.

CycLex Co., Ltd
1063-103 Tera-Sawaoka, Ina, Nagano, Japan 396-0002
Fax: 81-265-76-7618
e-mail: info@cyclex.co.jp
URL: http://www.cyclex.co.jp