MNK2 (Human), Active

Full-length recombinant protein expressed in Sf9 cells

Cat# CY-SPM55

Lot No. G298-2
5 µg 0.1 µg/µl

Background:

MNK2 (MAP kinase-interacting kinase 2) contains a conserved C-terminal ERK-interacting domain, a catalytic domain with homology to the calcium/calmodulin-dependent family of kinases, and putative MAP kinase phosphorylation sites located within the T loop of the kinase domain. MNK2 binds tightly to the growth factor-regulated MAP kinases, ERK1 and ERK2. ERK and p38 phosphorylate MNK2, which stimulates its in vitro kinase activity toward a substrate, eukaryotic initiation factor-4E (eIF-4E) (1). A yeast two-hybrid screen showed the MNK2 protein interacted with the ligand-binding domain of estrogen receptor beta (ERbeta) (2).

Product Description:

Recombinant full-length human MNK2 was expressed by baculovirus in Sf9 insect cells using an N-terminal GST tag. The gene accession number is NM_017572.

Gene Aliases:

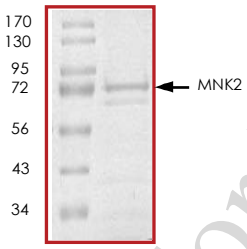
MKNK2; GPRK7

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 >70% by densitometry. Approx. MW 41kDa.



Storage:

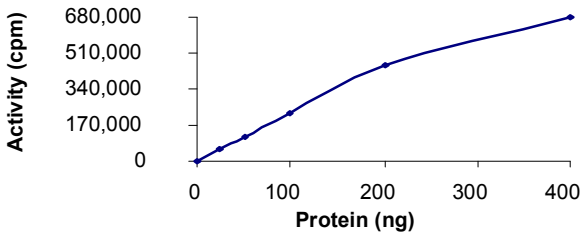
Store product at –70 °C. For optimal storage, aliquot target into smaller quantities after centrifugation and store at recommended temperature. For most favorable performance, avoid repeated handling and multiple freeze/thaw cycles.

Stability:

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

Specific Activity:

The specific activity was determined to be 93 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, 10 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:

Myelin Basic Protein (MBP) substrate 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.Waskiewicz, A J. et al: Mitogen-activated protein kinases activate the serine/threonine kinases Mnk1 and Mnk2. EMBO J. 1997 Apr 15;16(8):1909-20.

2.Slentz-Kesler, K. et al: Identification of the human Mnk2 gene (MKNK2) through protein interaction with estrogen receptor beta. Genomics. 2000 Oct 1;69(1):63-71.

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