Data Sheet (Cat.No.TMPY-04422)

TargetMol

Casein Kinase 1 gamma 2 Protein, Human, Recombinant (His)

General Information

Synonyms: CK1g2;casein kinase 1, γ2;casein kinase 1, gamma 2;Casein Kinase 1 γ 2

Protein Construction: A DNA sequence encoding the mature form of human CSNK1G2 (P78368-1) (Met 18-Lys 415) was expressed, with a polyhistidine tag at the N-terminus. Predicted N terminal: His

Species: Human

Expression Host: Baculovirus Insect Cells

Accession: P78368-1

Molecular Weight: 47.8 kDa (predicted); 48 kDa (reducing conditions)

QC Testing

Biological Activity: The specific activity was determined to be 13 nmol/min/mg using casein as substrate.

Purity: > 80 % as determined by SDS-PAGE

Endotoxin: < 1.0 EU/μg of the protein as determined by the LAL method.

Formulation: Supplied as sterile 20 mM Tris, 500 mM NaCl, 10% gly, 1 mM DTT, pH 8.0.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

Casein kinase I gamma 2 isoform (CSNK1G2), a member of the large casein kinase I (CKI) subfamily, protein kinase superfamily. It may affect the development of brain, and associate with vesicular trafficking and neurotransmitter releasing from small synaptic vesicles. The CKI family includes several other isoforms (alpha, beta, gamma, and delta). Dishevelled (Dsh), another positive component of the Wnt pathway, becomes phosphorylated in response to Wnt signals. All the CKI isoforms, with the exception of gamma, increase the phosphorylation of Dsh in vivo. Casein kinase 1 gamma (CK1gamma, or CSNK1G) is associated with the cell membrane and binds to LRP. CK1gamma was found to be needed for Wnt signaling through Wnt receptor LRP. CSNK1G2 inhibits Smad3-mediated TGF-beta responses including induction of target genes and cell growth arrest, and this inhibition is dependent on CSNK1G2 kinase activity. The overexpression of CSNK1G2 in human cancers, may act as an

oncoprotein during tumorigenesis. In addition, as an MTA1s-binding protein, CSNK1G2 could further potentiate the estrogen receptor (ER) corepressive function of MTA1s.

Reference

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Mishra SK,et al.(2004) Metastatic tumor antigen 1 short form (MTA1s) associates with casein kinase I-gamma2, an estrogen-responsive kinase. Oncogene. 23(25): 4422-9.
Yinan M,et al.(2004) Polymorphisms of casein kinase I gamma 2 gene associated with simple febrile seizures in Chinese Han population. Neurosci Lett. 368(1): 2-6.
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Guo X,et al.(2008) Ligand-dependent ubiquitination of Smad3 is regulated by casein kinase 1 gamma 2, an inhibitor of TGF-beta signaling. Oncogene. 27(58): 7235-47.

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