Human VRK1 Protein (His & GST Tag)

Catalog Number: **11555-H20B**

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General Information

Gene Name Synonym:

PCH1; PCH1A; 51PK

Protein Construction:

A DNA sequence encoding the human VRK1 (Q99986) (Met 1-Lys 396) was fused with the N-terminal polyhistidine-tagged GST tag at the N-terminus.

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 88 % as determined by SDS-PAGE

Bio Activity:

No Kinase Activity

Endotoxin:

< 1.0 EU per μg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 ℃

Predicted N terminal: Met

Molecular Mass:

The recombinant human VRK1/GST chimera consists of 633 amino acids and has a calculated molecular mass of 73 KDa. It migrates as an approximately 65-70 KDa band in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 20mM Tris, 500mM NaCl, pH 7.4, 10% gly

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

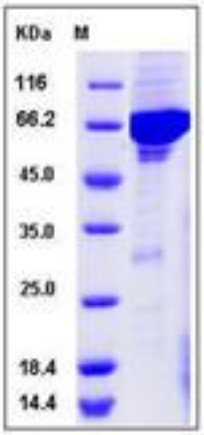
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

VRK1 is a member of the vaccinia-related kinase (VRK) family of serine/threonine protein kinases. Serine/threonine protein kinases are tumor suppressor that controls the activity of AMP-activated protein kinase family members, thereby playing a role in various processes such as cell metabolism, cell polarity, apoptosis and DNA damage response. VRK1 contains 1 protein kinase domain and localizes to the nucleus. VRK1 gene is widely expressed in human tissues and has increased expression in actively dividing cells, such as those in testis, thymus, fetal liver, and carcinomas. As a serine/threonine kinase, VRK1 phosphorylates 'Thr-18' of p53/TP53 and may thereby prevent the interaction between p53/TP53 and MDM2. Defects in VRK1 are the cause of pontocerebellar hypoplasia type 1 (PCH1), also called pontocerebellar hypoplasia with infantile spinal muscular atrophy or pontocerebellar hypoplasia with anterior horn cell disease. PCH1 is characterized by an abnormally small cerebellum and brainstem, central and peripheral motor dysfunction from birth, gliosis and anterior horn cell degeneration resembling infantile spinal muscular atrophy.

References

1.Sugimoto J, *et al*. (1999) Isolation and mapping of a polymorphic CA repeat sequence at the human VRK1 locus. J Hum Genet. 44 (2): 133-4.
2.Lopez-Borges S, *et al*. (2000) The human vaccinia-related kinase 1 (VRK1) phosphorylates threonine-18 within the mdm-2 binding site of the p53 tumour suppressor protein. Oncogene. 19 (32): 3656-64.
3.Sevilla A, *et al*. (2004) c-Jun phosphorylation by the human vaccinia-related kinase 1 (VRK1) and its cooperation with the N-terminal kinase of c-Jun (JNK). Oncogene. 23 (55): 8950-8.