Human CARKL / SHPK Protein

Catalog Number: **14833-HNCB**

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Biological Solution Specialist

General Information

Gene Name Synonym:

CARKL; SHK; 4930431K22Rik; AI194947; AW260459; Carkl

Protein Construction:

A DNA sequence encoding the human SHPK (NP_037408.2) (Ala2-Ser478) was fused with two additional amino acids (Gly&Pro) at the N-terminus.

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 85 % as determined by SDS-PAGE

Bio Activity:

Kinase activity untested

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: Gly

Molecular Mass:

The recombinant human SHPK consists of 479 amino acids and has a calculated molecular mass of 51.5 kDa. The recombinant protein migrates as an approximately 47 kDa band in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 20mM Tris, 500mM NaCl, 3mM DTT, 10% glycerol, pH 7.4.

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:

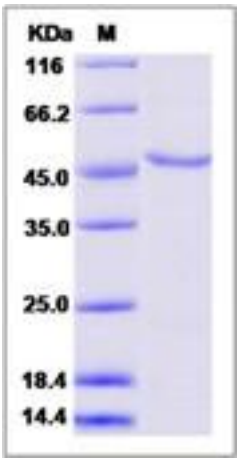
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

CARKL, also known as SHPK, is a nonprotein kinase of glucose metabolism. CARKL has weak homology to several carbohydrate kinases, a class of proteins involved in the phosphorylation of sugars as they enter a cell, inhibiting return across the cell membrane. CARKL catalyzes an orphan reaction in the pentose phosphate pathway, refocusing cellular metabolism to a high-redox state upon physiological or artificial downregulation. CARKL-dependent metabolic reprogramming is required for proper M1- and M2-like macrophage polarization and uncover a rate-limiting requirement for appropriate glucose flux in macrophage polarization.

References

1.Haschemi A. et al., 2012, Cell Metab. 15 (6): 813-26.
2.Udeshi ND. et al., 2012, Mol Cell Proteomics. 11 (5): 148-59.
3.Wamelink MM. et al., 2008, Hum Mutat. 29 (4): 532-6.