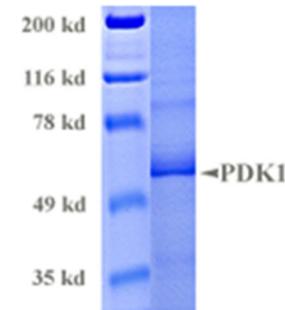


Active PDK1

CATALOG #:	7706-5
SOURCE:	Sf 9 cells
PURITY:	1 µg of PDK1 protein was subjected to SDS-PAGE and Coomassie blue staining. The scan of the gel showed >95% purity of the PDK1 protein, and the band was at ~59 kDa.
SPECIFIC ACTIVITY:	159 nmol/min/mg
MOLECULAR WEIGHT:	~59 kDa.
FORMULATION:	Recombinant proteins in storage buffer (50 mM Tris-HCl, pH 7.5, 150 mM NaCl, 0.25 mM DTT, 0.1 mM EGTA, 0.1 mM EDTA, 0.1 mM PMSF, 25% glycerol).
STORAGE CONDITIONS:	Store product frozen at or below -70°C. Stable for 1 year at -70°C as undiluted stock. Aliquot to avoid repeated thawing and freezing.

BACKGROUND DESCRIPTION: The initial steps in insulin signal transduction occur at the plasma membrane and lead to the activation of phosphatidylinositide (PtdIns) 3-kinase and the formation of PtdIns (3,4,5)P₃ in the inner leaflet of the plasma membrane which is then converted to PtdIns (3,4)P₂ by a specific phosphatase. PDK1 or 3-phosphoinositide-dependent protein kinase (PDK1), is activated by the presence of PtdIns (3,4,5) P₃ or PtdIns (3,4)P₂. PDK1 then activates protein kinase B (PKB) which, in turn, inactivates glycogen synthase kinase-3 (GSK3). The phosphorylation of other proteins by PKB and GSK3 is likely to mediate many of the intracellular actions of insulin. Thus, PDK1 plays a key role in mediating many of the actions of the second messenger(s) PtdIns (3, 4, 5) P₃ and/or PtdIns (3,4) P₂. The human PDK1 is a 556-residue monomeric enzyme comprising of a catalytic domain that is most similar to the PKA, PKB and PKC subfamily of protein kinases and a carboxy-terminal pleckstrin homology (PH) domain. The PDK1 gene is located on human chromosome 16p13.3 and is expressed ubiquitously in human tissues. Human PDK1 is homologous to the Drosophila protein kinase DSTPK61, which have been implicated in the regulation of sex differentiation, oogenesis and spermatogenesis. Expressed PDK1 and DSTPK61 phosphorylated Thr308 of PKB alpha only in the presence of PtdIns (3, 4, 5) P₃ or PtdIns (3,4) P₂. Overexpression of PDK1 in 293 cells activated PKB alpha and potentiated the IGF1-induced phosphorylation of PKB alpha at Thr308.

ACTIVITY: 159 nmol phosphate incorporated into PDKtide substrate peptide per minute per mg protein at 30°C for 15 minutes using a final concentration of 50 µM ATP (0.83 µCi/assay).



PDK1 Protein Gel

RELATED PRODUCTS:

- PDK1 Antibody (Cat. No. 3449-100)
- PDK1 Blocking peptide (Cat. No. 3449BP-50)

FOR RESEARCH USE ONLY! Not to be used in humans.