LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human PBK Protein
Catalog Number: hRP-1285
Manufacturer: LD Biopharma, Inc.

Introduction

Human Lymphokine-activated killer T-cell-originated protein kinase (PBK) gene encodes a serine / threonine protein kinase related to the dual specific mitogen-activated protein kinase kinase (MAPKK) family. Evidence suggests that mitotic phosphorylation is required for its catalytic activity. The encoded protein may be involved in the activation of lymphoid cells and support testicular functions, with a suggested role in the process of spermatogenesis. Over-expression of this gene has been implicated in tumorigenesis. Recent data indicated that PBK phosphorylates MAP kinase p38, and also be complexed with p53 protein for regulating G2/M checkpoint during doxorubicin-induced DNA damage.

Full-length human PBK cDNA (2 – 322 aa, derived from BC015191) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein is expressed in E.coli as inclusion bodies. The final product was refolded using our unique "temperature shift inclusion body refolding" technology and chromatographically purified.

Gene Symbol:	PBK (CT84; Nori-3; SPK; TOPK)
Accession Number:	NP_060962
Species:	Human
Size:	50 µg / Vial
Composition:	1.0 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, arginine, DTT and Sucrose.
Storage:	In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

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Hu,F., et al., *c-Myc and E2F1 drive PBK/TOPK expression in high-grade malignant lymphomas*. Leuk. Res. 37 (4), 447-454 (2013)

Park,J.H., et al., *Phosphorylation of IkappaBalpha at serine 32 by T-lymphokine-activated killer cell-originated protein kinase is essential for chemoresistance against doxorubicin in cervical cancer cells.* J. Biol. Chem. 288 (5), 3585-3593 (2013)

Wei,D.C., et al., *Overexpression of T-LAK cell-originated protein kinase predicts poor prognosis in patients with stage I lung adenocarcinoma*. Cancer Sci. 103 (4), 731-738 (2012)

Applications

1. May be used for in vitro PBK protein mediated p53 pathway regulation in germ cell or cancer cells study with “ProFectin” based intracellular delivery of this protein.
2. May be used for PBK protein – protein interaction assay.
3. As Enzymatic substrate for various proteases.
4. Potential diagnostic biomarker protein for various cancer diseases.
5. May be used for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFEGISNFKTPSKLSEKKKSVLCSTPTINIPASPFMQ
KLGFGTGVNVYLMKRSPRGLSHSPWAVKKINPICNDHYRSVYQKRLMDEAKILKSLHHPNIVGY
RAFTEANDGSLCLAMEYGGEKSLNDLIEERYKASQDPFPAAIILKVALNMARGLKYLHQEKKLL
HGDIKSSNVVIKGDFETIKICDVGVSLPLDENMTVTDPEACYIGTEPWKPKEAVEENGVITDKA
DIFAFGLTLWEMMTLSIPHINLSNDDDDEDKTFDESDFDDEAYYAALGTRPPINMEELDESYQK
VIELFSVCTNEDPKDRPSAAHIVEALETDV