



LD Biopharma, Inc.
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San Diego, CA 92121
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<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human PGK1 Protein
Catalog Number: hRP-1570
Manufacturer: LD Biopharma, Inc.

Introduction

The protein encoded by human phosphoglycerate kinase 1 (PGK1) gene is a glycolytic enzyme that catalyzes the conversion of 1,3-diphosphoglycerate to 3-phosphoglycerate. The encoded protein may also act as a cofactor for polymerase alpha. Additionally, PGK1 protein is secreted by tumor cells where it participates in angiogenesis by functioning to reduce disulfide bonds in the serine protease, plasmin, which consequently leads to the release of the tumor blood vessel inhibitor angiostatin. The encoded protein has been identified as a moonlighting protein based on its ability to perform mechanistically distinct functions. Deficiency of the enzyme is associated with a wide range of clinical phenotypes hemolytic anemia and neurological impairment.

Full-length human PGK1 (416aa, derived from BC023234) gene was constructed with 29 aa N-terminal T7 / His / TEV cleavage site Tags and 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: PGK1 (HEL-S-68p; MIG10; PGKA)
Accession Number: NP_000282.1
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, Sucrose, DTT .
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Ameis HM, et al., *PGK1 as predictor of CXCR4 expression, bone marrow metastases and*



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survival in neuroblastoma. PLoS ONE 8 (12), E83701 (2013)

Ahmad SS, et al., *Phosphoglycerate kinase 1 as a promoter of metastasis in colon cancer.* Int. J. Oncol. 43 (2), 586-590 (2013)

Lay AJ, et al., *Phosphoglycerate kinase acts in tumour angiogenesis as a disulphide reductase.* Nature 408 (6814), 869-873 (2000)

Applications

1. May be used as *auto-antibodies detection reagent*, which will react with sera of some auto-immuno-diseases and cancer patients.
2. May be used for in vitro PKG1 mediated glycolytic pathway regulation study by intracellularly delivery this protein with “ProFectin” reagent.
3. May be used for PKG1 protein-protein interaction assay.
4. May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
5. As antigen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFSLSNKLTLDKLDVKGRVVMRVDNFNPMKNNQITN
NQR IKA AVPSIKFCLDNGAKSVVLM SHLGRPDGVPMPDKYSLEPVAVELKSLGKDVLFKDCV
GPEVEKACANPAAGSVILLENLRFHVVEEGKGDASGNKVKAEPAKIEAFRASLSKLGDVYVND
AFGTAHRAHSSMVGVNLPQKAGGFLMKKELNYFAKALES PERPFLAILGGAKVADKIQLINMML
DKVNEMIIGGGMAFTFLKVLNMEIGTSLFDEEGAKIVKDLMSKA EKNGVKITLPVDFVTADKF
DENAKTGQATVASGIPAGWMGLDCGPES SKKYAEAVTRAKQIVWNGPVGVFWEAFARGTKALM
DEVVKATSRGCITIIIGGDTATCCA KWNTEDK VSHVSTGGGASLELLEGGKVLPGVDALSNI