



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human GNPDA1 Protein
Catalog Number: hRP-1304
Manufacturer: LD Biopharma, Inc.

Introduction

Glucosamine-6-phosphate isomerase 1 (GNPDA1) is an allosteric enzyme that catalyzes the reversible conversion of D-glucosamine-6-phosphate into D-fructose-6-phosphate and ammonium. Recent data indicated that GNPDA1 seems to trigger calcium oscillations in mammalian eggs. These oscillations serve as the essential trigger for egg activation and early development of the embryo.

Full-length human GNPDA1 cDNA (2–289 aa) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (31aa) 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: GNPDA1 (GNP1; GNPI; GPI; HLN)
Accession Number: NP_005462
Species: Human
Size: 10 µg / Vial
Composition: 0.1 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

Alvarez-Anorve, L.I., et al., *Allosteric kinetics of the isoform 1 of human glucosamine-6-phosphate deaminase*. Biochim. Biophys. Acta 1814 (12), 1846-1853 (2011)



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Zhang, J., et al., *Cloning and functional characterization of GNPI2, a novel human homolog of glucosamine-6-phosphate isomerase/oscillin*. J. Cell. Biochem. 88 (5), 932-940 (2003)

Applications

1. May be used for in vitro GNPDA1 mediated calcium oscillations regulation in mammalian eggs study with “ProFectin” based intracellular delivery of this protein.
2. May be used as specific substrate protein for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
3. May be used for GNPDA1 protein – protein interaction assay.
4. May be used for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFKLIILEHYSQASEWAAKYIRNRIIQFNPGPEKYFT
LGLPTGSTPLGCKYKLLIEYYKNGDLSFKYVKTFNMDEYVGLPRDHPESYHSFMWNNFFKHIDIH
PENTHILDGNAVDLQAECDAFEKIKAAAGGIELFVGGIGPDGHIAFNEPGSSLVSRTRVKTLM
DTILANARFFDGELTKVPTMALTVGVGTVM DAREVMILITGAHKAFALYKAIEEGVNHMWTVSA
FQQHPRTVFVCDDEATLELKVKTVKYFKGLMLVHNKLVDPLYSIKEKETESQSSKKPYSD