



LD Biopharma, Inc.
9924 Mesa Rim Road Suite B
San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human HSPD1 Protein
Catalog Number: hRP-1578
Manufacturer: LD Biopharma, Inc.

Introduction

Human 60 kD heat shock protein, mitochondrial (HSPD1) gene encodes a member of the chaperonin family. The encoded mitochondrial protein may function as a signaling molecule in the innate immune system. This protein is essential for the folding and assembly of newly imported proteins in the mitochondria. This gene is adjacent to a related family member and the region between the 2 genes functions as a bidirectional promoter. Several pseudogenes have been associated with this gene. Two transcript variants encoding the same protein have been identified for this gene. Mutations associated with this gene cause autosomal recessive spastic paraplegia 13. Recent data indicated that HSPD1 may also plays an important roles in type-II diabetes by down-regulation of mitochondrial chaperon HSP60 and cancer cell metastasis by interacting with BRAF signaling pathway.

N-terminal 1-26aa transit peptide domain truncated version of human HSPD1 (27 – 573 aa) gene was constructed with 31 aa N-terminal T7 / His / TEV cleavage site Tag 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: HSPD1 (CPN60; GROEL; HLD4; HSP60; HSP65)
Accession Number: NP_0021147.2
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



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Kleinriders, A., et al., *Leptin regulation of Hsp60 impacts hypothalamic insulin signaling*. J. Clin. Invest. 123 (11), 4667-4680 (2013)

Park WS, et al., *Differential protein expression of lymph node metastases of papillary thyroid carcinoma harboring the BRAF mutation*. Anticancer Res. 33 (10), 4357-4364 (2013)

Gorska M, et al., *Geldanamycin-induced osteosarcoma cell death is associated with hyperacetylation and loss of mitochondrial pool of heat shock protein 60 (hsp60)*. PLoS ONE 8 (8), E71135 (2013)

Applications

1. May be used as auto-antibodies detection reagent, which will react with sera of some auto-immuno-diseases patients.
2. May be used for in vitro HSPD1 mediated mitochondrial protein assembling regulation study for cancer cell metastasis and apoptosis by intracellularly delivery this protein with “ProFectin” reagent.
3. May be used for HSPD1 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

MASMTGGQQMGRGHHHHHENLYFQGGFELAKDVKFGADARALMLQGVDLLADAVAVTMGPKG
RTVIEEQSWGSPKVTKDGVTVAKSIDLKDKYKNIGAKLVQDVANNTNEEAGDGT'TTATVLARSI
AKEGFEEKISKGANPVEIRRGVMLAVDAVIAELKKQSKPVTTPEEIAQVATISANGDKEIGNIIS
DAMKKVGRKGVITVKDGKTLNDELEIEGKMFDRGYISPYFINTSKGQKCEFQDAYVLLSEKKI
SSIQSIVPALIEIANHRKPLVIAEDVDGEALSTLVLNRLKVGLQVVAVKAPGFGDNRKNQLKD
MAIATGGAVFGEGLTLNLEDVQPHDLGKVGEVIVTKDDAMLLKKGDKAQIEKRIQEIEEQLD
VTTSEYEKEKLNLERLAKLSDGVAVLKVGTS DVEVNEKKDRVTDALNATRAAVEEGIVLGGGCA
LLRCIPALDSLTPANEDQKIGIEIKRTLKIPAMTIAKNAGVEGSLIVEKIMQSSSEVGYDAMA
GDFVNMVEKGIIDPTKVVRTALLDAAGVASLLTAEVVVTEIPKKEKDPGMGAMGGMGGMGGG
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