LD Biopharma, Inc.
7384 Trade Street, Suite B
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- PRODUCT DATA SHEET -

Name of Product: **Recombinant Human IMPDH2 Protein**
Catalog Number: HRP-2243
Manufacturer: LD Biopharma, Inc.

Introduction

Human inosine-5'-monophosphate dehydrogenase 2 (IMPDH2) gene encodes the rate-limiting enzyme in the de novo guanine nucleotide biosynthesis. It is thus involved in maintaining cellular guanine deoxy- and ribonucleotide pools needed for DNA and RNA synthesis. IMPDH2 protein catalyzes the NAD-dependent oxidation of inosine-5'-monophosphate into xanthine-5'-monophosphate, which is then converted into guanosine-5'-monophosphate. This gene is up-regulated in some neoplasms, suggesting it may play a role in malignant transformation. Recent data also indicated that IMPDH2 also plays an important role in neuronal inflammation pathway regulation, and selective inhibit its activity may proves a novel strategy for developing antineuroinflammation therapy.

Full-length human IMPDH2 cDNA (513aa, derived from BC012840) was constructed with codon optimization gene synthesis and expressed with a human N-terminalT7-His-TEV cleavage site Tag (31aa) fusion. This protein was 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:	IMPDH2	(IMPD2; IMPDH-II)
Accession Number:	NP_000875	
Species:	Human	
Size:	30 µg / Vial	
Composition:	0.3 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose, DTT and other.	
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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Duan S, et al., ***IMPDH2 promotes colorectal cancer progression through activation of the PI3K/AKT/mTOR and PI3K/AKT/FOXO1 signaling pathways.*** J. Exp. Clin. Cancer Res. 37 (1), 304 (2018)

Li-Xi Liao, et al., ***Highly selective inhibition of IMPDH2 provides the basis of antineuroinflammation therapy.*** PNAS.Jul 18; 114(29):E5986-E5994.(2017)

Xu Y, et al.,***High expression of IMPDH2 is associated with aggressive features and poor prognosis of primary nasopharyngeal carcinoma.*** Sci Rep 7 (1), 745 (2017)

Pua KH, et al., ***IMPDH2 Is an Intracellular Target of the Cyclophilin A and Sanglifehrin A Complex.*** Cell Rep 18 (2), 432-442 (2017)

Applications

1. May be used for in vitro IMPDH2 mediated IMP/XMP metabolic signaling pathway regulation for cancer cell study using intracellular delivery of recombinant human IMPDH2 protein with protein delivery reagent such as ProFectin.
2. May be used for IMPDH2 protein-protein interaction assay.
3. May be used as specific substrate protein for IMPDH2 specific kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. Potential therapeutic protein, which may be used for anti-neuroinflammation therapy drug development.
5. As native human IMPDH2 immunogen for specific antibody production.

Quality Control

Purity: > 92 % by SDS-PAGE.

Recombinant Human IMPDH2 Protein Sequence (59.2 kD)

MASMTGGQQMGRGHHHHHHENLYFQGGEFELADYLISGGTSYVPDDGLTAQQLFNCGDGLTYND
FLILPGYIDFTADQVDLTSALTKKITLKTPLVSSPMDTVTEAGMAIAMALTGGIGFIHHNCTPE
FQANEVRKVKKYEQGFITDPVVLSPKDRVRDVFEAKARHGFCGIPITDTGRMGSRLVGIISSRD
IDFLKEEEHDCFLEEIMTKREDLVVAPAGITLKEANEILQRSKKGKLPIVNEDDELVAIIARTD
LKKNRDYPLASKDAKKQLLCGAAIGTHEDDKYRLDLLAQAGVDVVVLDSSQGNSIFQINMIKYI
KDKYPNLQVIGGNVVTAAQAKNLIDAGVDALRVGMGSGSICITQEVLACGRPQATAVYKVSEYA

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RRFGVPVIADGGIQNVGHIAKALALGASTVMMGSLLAATTEAPGEYFFSDGIRLKKYRGMGSLD
AMDKHLSSQNRYFSEADKIKVAQGVSGAVQDKGSIHKFVPYLIAGIQHSCQDIGAKSLTQVRAM
MYSGELKFEKRTSSAQVEGGVHSLHSYEKRLF