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

Name of Product: Recombinant Human PIN1 Protein
Catalog Number: HRP-0850
Manufacturer: LD Biopharma, Inc. USA

Introduction

Human Peptidyl-prolyl cis/trans isomerases (PPIases) catalyze the cis/trans isomerization of peptidyl-prolyl peptide bonds. Human PIN1 gene encodes one of the PPIases, which specifically binds to phosphorylated ser/thr-pro motifs to catalytically regulate the post-phosphorylation conformation of its substrates. The conformational regulation catalyzed by this PPIase has a profound impact on key proteins involved in the regulation of cell growth, genotoxic and other stress responses, the immune response, induction and maintenance of pluripotency, germ cell development, neuronal differentiation, and survival. This enzyme also plays a key role in the pathogenesis of Alzheimer's disease and many cancers. Multiple alternatively spliced transcript variants have been found for this gene.

Full-length human PIN1 cDNA (163aa) was constructed with codon optimization gene synthesis and expressed with N-terminal T7 Tag (15aa) 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:	PIN1 (DOD; UBL5)
Accession Number:	NP_006212
Species:	Human
Size:	20 µg / Vial
Composition:	0.2 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 two weeks.

Key References

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Lu,K.P., et al., ***A human peptidyl-prolyl isomerase essential for regulation of Mitosis.*** Nature 380 (6574), 544-547 (1996)

Crenshaw,D.G., et al., ***The mitotic peptidyl-prolyl isomerase, Pin1, interacts with Cdc25 and Plx1.*** EMBO J. 17 (5), 1315-1327 (1998)

Arosio,B., et al., ***Pin1 contribution to Alzheimer's disease: transcriptional and epigenetic mechanisms in patients with late-onset Alzheimer's disease.*** Neurodegener Dis 10 (1-4), 207-211 (2012)

Ma,S.L., et al., ***Prolyl isomerase Pin1 promotes amyloid precursor protein (APP) turnover by inhibiting glycogen synthase kinase-3beta (GSK3beta) activity: novel mechanism for Pin1 to protect against Alzheimer disease.*** J. Biol. Chem. 287 (10), 6969-6973 (2012)

Rizzolio,F., et al., ***Retinoblastoma tumor-suppressor protein phosphorylation and inactivation depend on direct interaction with Pin1.*** Cell Death Differ. 19 (7), 1152-1161 (2012)

Applications

1. May be used for in vitro PIN1 mediated cis/trans isomerization of peptidyl-prolyl peptide bonds regulation for cancer cell study using intracellular delivery of recombinant human PIN1 protein with protein delivery reagent such as ProFectin.
2. May be used for PIN1 protein-protein interaction assay.
3. May be used as specific substrate protein for PIN1 specific kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. Potential therapeutic protein, which may be used for p53 activity related diseases, such as cancer treatment.
5. As native human PIN1 antigen for specific antibody production.

Quality Control

Purity: > 92 % by SDS-PAGE.

Recombinant Human PIN1 Protein Sequence (19.82 kD)

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MASMTGGQQMGRGEFMADEEKLPPGWEKRMSRSSGRVYYFNHITNASQWERPSGNSSSGGKNGQ
GEPARVRCSHLLVKHSQSRRPSSWRQEKITRTKEEALELINGYIQKIKSGEEDFESLASQFSDC
SSAKARGDLGAFSRGQMQKPFEDASFALRTGEMSGPVFTDSGIHIILRTE