



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 KPNA5 Protein
Catalog Number: hRP-1475
Manufacturer: LD Biopharma, Inc.

Introduction

The transport of molecules between the nucleus and the cytoplasm in eukaryotic cells is mediated by the nuclear pore complex (NPC) which consists of 60-100 proteins and is probably 120 million Daltons in molecular size. Small molecules (up to 70 kD) can pass through the nuclear pore by nonselective diffusion; larger molecules are transported by an active process. Most nuclear proteins contain short basic amino acid sequences known as nuclear localization signals (NLSs). Human importing subunit alpha-6 (IPOS6, also named as KPNA5) protein belongs to the importin alpha protein family and is thought to be involved in NLS-dependent protein import into the nucleus. Recent structure/ functional study of Ebola eVP24 / KPNA5 interaction indicated that KPNA5 interacts with NLS domain using different KPNA5 domains for selective nuclei transportation, such as Ebola eVP24 protein binds to KPNA5 region to selective compete with phosphorylated STAT1 for blocking host cell intrinsic innate immunity.

Full-length human KPNA5 cDNA (538aa, derived from BC047409) was constructed with fully codon optimization strategy and expressed with a small T7-His-TEV cleavage site Tag (29aa) 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: KPNA5 (IPOA6; SRP6)
Accession Number: NP_002260
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.



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Key References

Wei Xu, et al., *Ebola Virus VP24 Targets a Unique NLS Binding Site on Karyopherin Alpha 5 to Selectively Compete with Nuclear Important of Phosphorylated STAT1*. *Cell Host & Microbe* 16, 187-200 83, August 13. (2014)

Yang SN, et al., *Probing the specificity of binding to the major nuclear localization sequence-binding site of importin-alpha using oriented peptide library screening*. *J. Biol. Chem.* 285 (26), 19935-19946 (2010)

Gallay P, et al., *HIV nuclear import is governed by the phosphotyrosine-mediated binding of matrix to the core domain of integrase*. *Cell* 83 (4), 569-576 (1995)

Applications

1. May be used for in vitro human KPNA5 mediated cellular protein cytoplasm/nuclei transportation regulation study by intracellularly delivery this protein with "ProFectin" reagent.
2. May be used for KPNA5 protein-protein interaction assay.
3. May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. As antigen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHGNLYFQGGFEDAMASPGKDNRYRMKSYKNKALNPQEMRRRREEEGI
QLRKQKREEQLFKRRNVYLPRNDESMLESPIQDPDISSTVPIPEEEVVT'TDMVQMI FSNADQQ
LTATQKFRKLLSKEPNPPIDQVIQKPGVVQRFVKFLERNENCTLQFEAAWALTNIASGTFLHTK
VVIETGAVPIFIKLLNSEHEDVQEQAVALGNIAGDNAECRDFVLNCEILPPLLELLTNSNRLT
TTRNAVWALSNLCRGKNPPPNF'SKVSPCLNVLSRLLFSSDPDVLADVCWALSYSYLSGDPNDKIQA



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VIDSGVCRRLVELLMHNDYKVVSPALRAVGNIVTGDDIQTQVILNCSALPCLLHLLSSPKESIR
KEACWTVSNITAGNRAQIQAVIDANIFPVLIEILQKAEFRTRKEAAWAITNATSGGTPEQIRYL
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