



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 KPNA2 Protein
Catalog Number: hRP-0432
Manufacturer: LD Biopharma, Inc.

Introduction

The import of proteins into the nucleus is a process that involves at least 2 steps. The first is an energy-independent docking of the protein to the nuclear envelope and the second is an energy-dependent translocation through the nuclear pore complex. Imported proteins require a nuclear localization sequence (NLS) which generally consists of a short region of basic amino acids or 2 such regions spaced about 10 amino acids apart. Proteins involved in the first step of nuclear import have been identified in different systems. These include the *Xenopus* protein importin and its yeast homolog, SRP1 (a suppressor of certain temperature-sensitive mutations of RNA polymerase I in *Saccharomyces cerevisiae*), which bind to the NLS. Human karyopherin alpha 2 (RAG cohort, importin alpha 1) KPNA2 protein interacts with the NLSs of DNA helicase Q1 and SV40 T antigen and may be involved in the nuclear transport of proteins. KPNA2 also may play a role in V (D) J recombination.

Full length recombinant human KPNA2 protein was constructed with N-terminal 15aa (T7) tag. This protein was expressed in *E. coli* as inclusion bodies, refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: KPNA2
Accession Number: NP_002257
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, arginine, DTT and Glycerol.
Storage: In Liquid. Keep at -20°C for long term storage. Product is stable at 4 °C for at least 7 days.



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Key References

Lange,A., et al. *Classical nuclear localization signals: definition, function, and interaction with importin alpha*. J. Biol. Chem. 282 (8), 5101-5105 (2007)

Sekimoto,T., et al. *Importin alpha protein acts as a negative regulator for Snail protein nuclear import*. J. Biol. Chem. 286 (17), 15126-15131 (2011)

Teng,S.C., et al. *Importin KPNA2, NBS1, DNA repair and tumorigenesis*. J. Mol. Histol. 37 (5-7), 293-299 (2006)

Applications

1. As soluble active recombinant protein, may be used for human nuclei protein transportation study in vitro,
2. As immunogen for specific antibody production.

Quality Control

1. Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQENGRGEFSTNENANTPAARLHRFKKNGKDSTEMRRRRIEVNVELRKAKKD
DQMLKRRNVSSFPDDATSPHQENRNNQGTVNWSVDDIVKGINSSNVENQLQATQAARK
LLSREKQPPIDNIIRAGLIPKFVSVFLGRTDCSPIQFESAWALTNIASGTSEQTKAVVD
GGAIPAFISLLASPHAHISEQAVWALGNIAGDGSVFRDLVIKYGAVDPLLALLAVPDM
SSLACGYLRNLTWTLNLCRNKNPAPPIDAVEQILPTLVRLLLHDDPEVLADTCWAIS
YLTGDPNERIGMVVKTGVVPQLVKLLGASELPVTPALRAIGNIVTGTDEQTQVVIDA
GALAVFPSSLTNPKTNIQKEATWTMSNITAGRQDQIQQVVNHGLVPFLVSVLSKADFK
TQKEAVWAVTNYTSGGTVEQIVYLVHCGIIEPLMNLTLAKDTKIILVILDAISNIFQA
AEKLGETEKL SIMIEECGLDKIEALQNHENESVYKASLSLIEKYFSVEEEEDQNVVP
ETTSEGYTFQVQDGAPGTFNF