LD Biopharma, Inc.
9924 Mesa Rim Road Suite B
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human BIN1 Protein
Catalog Number: hTF-1430
Manufacturer: LD Biopharma, Inc.

Introduction

Human myc box-dependent-interacting protein 1 (BIN1) gene encodes several isoforms of a nucleo-cytoplasmic adaptor protein, one of which was initially identified as a MYC-interacting protein with features of a tumor suppressor. Isoforms that are expressed in the central nervous system may be involved in synaptic vesicle endocytosis and may interact with dynamin, synaptojanin, endophilin, and clathrin. Isoforms that are expressed in muscle and ubiquitously expressed isoforms localize to the cytoplasm and nucleus and activate a caspase-independent apoptotic process. Studies in mouse suggest that this gene plays an important role in cardiac muscle development. Alternate splicing of the gene results in ten transcript variants encoding different isoforms. Aberrant splice variants expressed in tumor cell lines have also been described. Recent data indicated that BIN1 may also plays an important role in Alzheimer's disease development.

Full-length mature human BIN1 (408 aa, Isoform-10) gene was constructed with a human Alpha-Fetal Protein N-terminal domain (AFPn)-His-TEV cleavage site (219aa) 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:	BIN1 (AMPH2; AMPHL; SH3P9)
Accession Number:	NP_647601
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 and 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

Lambert JC,et al., *Meta-analysis of 74,046 individuals identifies 11 new susceptibility loci for Alzheimer's disease*. Nat. Genet. 45 (12), 1452-1458 (2013)

Tan MS, et al., *Bridging integrator 1 (BIN1): form, function, and Alzheimer's disease*. Trends Mol Med 19 (10), 594-603 (2013)

Bohm J, et al., *Altered splicing of the BIN1 muscle-specific exon in humans and dogs with highly progressive centronuclear myopathy*. PLoS Genet. 9 (6), E1003430 (2013)

Sun L, et al., *Exploring the value of plasma BIN1 as a potential biomarker for alzheimer's disease*. J. Alzheimers Dis. 37 (2), 291-295 (2013)

Applications

1. May be used for in BIN1 mediated neuronal differentiation and development regulation study with “ProFectin” based intracellular delivery of this protein.
2. May be used as specific substrate protein for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
3. May be used for protein-protein interaction mapping.
4. Potential diagnostic biomarker protein for monitoring Alzheimer’s diseases.
5. As antigen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MTLHRNEYGIASILDSYQCTAEISLADLATIFFAQFVQEATYKEVSKMVKDALTAIEKPTGDEQ
SSGCLENQLPAFLEELCHEKEILEKYGHSDCCSQSEEGRHNCFLAHKKPTPASIPLFQVPEPVT
SCEAYEEDRETFMNKFIYEIARRHPFLYAPTILLWAARYDKIIPSCCKAENAVECFQTKAATVT
KELRESSGGSHHHHHHGSENLYFQGEFAEMGSKGVTAGKIASNVQKKLTRAQEKVLQKLGKADE
TKDEQFEQCVQNFNKQLTEGTRLQKDLRTYLASVKAMHEASKKLNECLQEVYEPDWPGRDEANK
IAENNDLLWMDYHQKLVDQALLTMDTYLGQFPDIKSRIAKRGRKLVDYDSARHHYESLQTAKKK
DEAKIAKAEEELIKAQKVFEEMNVDLQEELPSLWNSRVGFYVNTFQSIAGLEENFHKEMSKLNQ
NLNDVLVGLEKQHGSNTFTVKAQPSDNAPAKGNKSPSPPDGSPAATPEIRVNHEPEPAGGATPG

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ATLPKSPSQSSLPAVVVETFPATVNGTVEGGSGAGRLDLPPGFMFKVQAQHDYTATDTDELQLK
AGDVVLVIPFQNPEEQDEGWLMGVKESDWNQHKELEKCRGVFPENFTERVP