Optineurin (OPTN) Recombinant Protein

PRODUCT OVERVIEW

Product Name	Optineurin (OPTN), Recombinant Protein
Full Product Name	Optineurin Protein, Human, Recombinant (His & GST Tag)
Product Gene Name	OPTN recombinant protein
Product Synonym Names	Human Optineurin/OPTN Protein (His & GST Tag); ALS12 Protein, Human; FIP2 Protein, Human; GLC1E Protein, Human; HIP7 Protein, Human; HYPL Protein, Human; NRP Protein, Human; TFIIIA-INTP Protein, Human; optineurin
Sequence	Met1-Ile57 7
Host	Baculovirus-Insect Cells
Form/Format	Lyophilized from sterile 20mM Tris, 500mM Nacl, 10% glycerol, pH7.4. Normally 5%-8% trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the hard copy of CoA.
Purity/Purification	>85% as determined by SDS-PAGE
Preparation and Storage	Samples are stable for up to twelve months from date of receipt at -20 degree C to -80 degree C. Store it under sterile conditions at -20 degree C to -80 degree C. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles. In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice.
Molecular Weight	59,559 Da
OMIM	phenotype 613435
3D Structure	ModBase 3D Structure for Q96CV9
Species	Human
Endotoxin	<1.0EU per ug of the protein as determined by the LAL method
Predicted N Terminal	Met
Tag	N-GST & His
Protein Construction	A DNA sequence encoding the human OPTN (NP_068815.2)(Met1-Ile577) was expressed with the N-terminal polyhistidine-tagged GST tag at the N-terminus.
Reconstitution	A hardcopy of COA with reconstitution instruction is sent along with the products. Please refer to it for detailed information.
Related Product Information for OPTN recombinant protein	Background: OPTN (Optineurin) is a Protein Coding gene. The Optineurin gene encodes the coiled-coil containing protein optineurin. Optineurin is a multifunctional adaptor protein intimately involved in various vesicular trafficking pathways. Through interactions with an array of proteins, such as myosin VI, huntingtin, Rab8, and Tank-binding kinase 1, as well as via its oligomerization, optineurin can act as an adaptor, scaffold, or signal regulator to coordinate many cellular processes associated with the trafficking of membrane-delivered cargo. It is widely expressed in fat, adrenal, and other tissues. Certain mutations in OPTN (gene OPTN) are associated with primary open-angle glaucoma, a leading cause of irreversible blindness, and amyotrophic lateral sclerosis, a fatal motor neuron disease.
Product References and Citations for OPTN recombinant protein	Rezaie T. et al., 2002, Science. 295 (5557): 1077-9. Li Y. et al., 1998, Mol Cell Biol. 18 (3): 1601-10. Skarnes Wc RB. et al., 2011, Nature. 474 (7351): 337-42.

Other Notes	Small volumes of OPTN recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for OPTN purchase	MBS8121693 is a recombinant protein targeting OPTN. Also known as Optineurin Protein, Human, Recombinant (His & GST Tag). Host: Baculovirus-Insect Cells.



SDS-Page of OPTN recombinant protein

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for OPTN. It may not necessarily be applicable to this product.

NCBI GI #	20149572
NCBI GeneID	10133
NCBI Accession #	NP_068815.2
UniProt Primary Accession #	Q96CV9
UniProt Secondary Accession #	Q5T672; Q5T673; Q5T674; Q5T675; Q7LDL9; Q8N562; Q9UET9; Q9UEV4; B3KP00; D3DRS4; D3DRS8
UniProt Related Accession #	Q96CV9
GenBank Nucleotide #	NM_021980.4
NCBI Official Full Name	optineurin
NCBI Official Synonym Full Names	optineurin
NCBI Official Symbol	OPTN
NCBI Official Synonym Symbols	NRP; FIP2; HIP7; HYPL; ALS12; GLC1E; TFIIIA-INTP
UniProt Protein Name	Optineurin
UniProt Synonym Protein Names	E3-14.7K-interacting protein; FIP-2; Huntingtin yeast partner L; Huntingtin-interacting protein 7; HIP-7; Huntingtin-interacting protein L; NEMO-related protein; Optic neuropathy-inducing protein; Transcription factor IIIA-interacting protein; TFIIIA-IntP
Protein Family	Optineurin
UniProt Gene Name	OPTN
UniProt Synonym Gene Names	FIP2; GLC1E; HIP7; HYPL; NRP; HIP-7; TFIIIA-IntP
UniProt Entry Name	OPTN_HUMAN
NCBI Protein Information	optineurin; FIP-2; HIP-7; nemo-related protein; huntingtin yeast partner L; E3-14.7K-interacting protein; Huntingtin interacting protein L; huntingtin-interacting protein 7; huntingtin-interacting protein L; optic neuropathy-inducing protein; transcrption

NCBI Summary for OPTN	This gene encodes the coiled-coil containing protein optineurin. Optineurin may play a role in normal-tension glaucoma and adult-onset primary open angle glaucoma. Optineurin interacts with adenovirus E3-14.7K protein and may utilize tumor necrosis factor-alpha or Fas-ligand pathways to mediate apoptosis, inflammation or vasoconstriction. Optineurin may also function in cellular morphogenesis and membrane trafficking, vesicle trafficking, and transcription activation through its interactions with the RAB8, huntingtin, and transcription factor IIIA proteins. Alternative splicing results in multiple transcript variants encoding the same protein. [provided by RefSeq, Jul 2008]
UniProt Comments for OPTN	optineurin: Plays an important role in the maintenance of the Golgi complex, in membrane trafficking, in exocytosis, through its interaction with myosin VI and Rab8. Links myosin VI to the Golgi complex and plays an important role in Golgi ribbon formation. Negatively regulates the induction of IFNB in response to RNA virus infection. Plays a neuroprotective role in the eye and optic nerve. Probably part of the TNF-alpha signaling pathway that can shift the equilibrium toward induction of cell death. May act by regulating membrane trafficking and cellular morphogenesis via a complex that contains Rab8 and hungtingtin (HD). May constitute a cellular target for adenovirus E3 14.7, an inhibitor of TNF-alpha functions, thereby affecting cell death. Defects in OPTN are the cause of primary open angle glaucoma type 1E (GLC1E). Primary open angle glaucoma (POAG) is characterized by a specific pattern of optic nerve and visual field defects. The angle of the anterior chamber of the eye is open, and usually the intraocular pressure is increased. The disease is asymptomatic until the late stages, by which time significant and irreversible optic nerve damage has already taken place. Defects in OPTN are a cause of susceptibility to normal pressure glaucoma (NPG). Defects in OPTN are the cause of amyotrophic lateral sclerosis type 12 (ALS12). It is a neurodegenerative disorder affecting upper motor neurons in the brain and lower motor neurons in the brain stem and spinal cord, resulting in fatal paralysis. Sensory abnormalities are absent. Death usually occurs within 2 to 5 years. The etiology of amyotrophic lateral sclerosis is likely to be multifactorial, involving both genetic and environmental factors. The disease is inherited in 5-10% of the cases. 3 isoforms of the human protein are produced by alternative splicing. Protein type: Inhibitor Chromosomal Location of Human Ortholog: 10p13 Cellular Component: nucleoplasm; Golgi membrane; Golgi apparatus; recycling endosome; perinuclear region of cytoplasm; cytoplasmic membrane-bound vesicle; cytoplasm; autophagic vacuole; trans-Golgi network; cytosol; nucleus Molecular Function: protein C-terminus binding; protein binding; polyubiquitin binding; Rab GTPase binding Biological Process: cell death; macroautophagy; Golgi to plasma membrane protein transport; negative regulation of receptor recycling; protein targeting to Golgi; mitotic cell cycle; negative regulation of I-kappaB kinase/NF-kappaB cascade; signal transduction; defense response to Gram-negative bacterium; G2/M transition of mitotic cell cycle; regulation of I-kappaB kinase/NF-kappaB cascade; Golgi organization and biogenesis Disease: Glaucoma, Normal Tension, Susceptibility To; Glaucoma, Primary Open Angle; Amyotrophic Lateral Sclerosis 12
Research Articles on OPTN	**1.** that the loss-of-function, but not the proteinopathy itself, of OPTN leads to multisystem neurodegeneration.
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