Data Sheet (Cat.No.TMPH-01502)

TargetMol

Humanin Protein, Human, Recombinant (GST)

General Information

Synonyms:	HN;Humanin mitochondrial (HNM);MT-RNR2;Humanin
Protein Construction:	1-24 aa
Species:	Human
Expression Host:	E. coli
Accession:	Q8IVG9
Molecular Weight:	29.4 kDa (predicted)
AA Sequence:	MAPRGFSCLLLLTSEIDLPVKRRA

QC Testing

Biological Activity:	Activity has not been tested. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 85% as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose, pH 8.0.

Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in sterile deionized water. The product concentration should not be less than 100 μg/mL. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

Stability & Storage:

Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Plays a role as a neuroprotective factor. Protects against neuronal cell death induced by multiple different familial Alzheimer disease genes and amyloid-beta proteins in Alzheimer disease. Mediates its neuroprotective effect by interacting with a receptor complex composed of IL6ST/GP130, IL27RA/WSX1 and CNTFR. Also acts as a ligand for G-protein coupled receptors FPR2/FPRL1 and FPR3/FPRL2. Inhibits amyloid-beta protein 40 fibril formation. Also

inhibits amyloid-beta protein 42 fibril formation. Suppresses apoptosis by binding to BAX and preventing the translocation of BAX from the cytosol to mitochondria. Also suppresses apoptosis by binding to BID and inhibiting the interaction of BID with BAX and BAK which prevents oligomerization of BAX and BAK and suppresses release of apoptogenic proteins from mitochondria. Forms fibers with BAX and also with BID, inducing BAX and BID conformational changes and sequestering them into the fibers which prevents their activation. Can also suppress apoptosis by interacting with BIM isoform BimEL, inhibiting BimEL-induced activation of BAX, blocking oligomerization of BAX and BAK, and preventing release of apoptogenic proteins from mitochondria. Plays a role in up-regulation of anti-apoptotic protein BIRC6/APOLLON, leading to inhibition of neuronal cell death. Binds to IGFBP3 and specifically blocks IGFBP3-induced cell death. Competes with importin KPNB1 for binding to IGFBP3 which is likely to block IGFBP3 nuclear import. Induces chemotaxis of mononuclear phagocytes via FPR2/FPRL1. Reduces aggregation and fibrillary formation by suppressing the effect of APP on mononuclear phagocytes and acts by competitively inhibiting the access of FPR2 to APP. Protects retinal pigment epithelium (RPE) cells against oxidative stress-induced and endoplasmic reticulum (ER) stress-induced apoptosis. Promotes mitochondrial biogenesis in RPE cells following oxidative stress and promotes STAT3 phosphorylation which leads to inhibition of CASP3 release. Also reduces CASP4 levels in RPE cells, suppresses ER stress-induced mitochondrial superoxide production and plays a role in up-regulation of mitochondrial glutathione. Reduces testicular hormone deprivation-induced apoptosis of germ cells at the nonandrogen-sensitive stages of the seminiferous epithelium cycle. Protects endothelial cells against free fatty acid-induced inflammation by suppressing oxidative stress, reducing expression of TXNIP and inhibiting activation of the NLRP3 inflammasome which inhibits expression of proinflammatory cytokines IL1B and IL18. Protects against high glucose-induced endothelial cell dysfunction by mediating activation of ERK5 which leads to increased expression of transcription factor KLF2 and prevents monocyte adhesion to endothelial cells. Inhibits the inflammatory response in astrocytes. Increases the expression of PPARGC1A/PGC1A in pancreatic beta cells which promotes mitochondrial biogenesis. Increases insulin sensitivity.

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