

**Humanin Polyclonal Antibody**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP54578****Specification****Humanin Polyclonal Antibody - Product Information**

Application	IHC-P, IHC-F, IF, ICC, E
Primary Accession	<a href="#">Q8IVG9</a>
Host	Rabbit
Clonality	Polyclonal
Calculated MW	2.7 KDa
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Humanin
Epitope Specificity	1-24/24
Isotype	IgG
<b>Purity</b>	
affinity purified by Protein A	
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Secreted
SIMILARITY	Belongs to the humanin family.
SUBUNIT	Interacts with BAX, IGFBP3 and TRIM11.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

**Background Descriptions**

Humanin, an endogenous anti-apoptotic peptide against Alzheimer disease-related insults, consists of 24 amino acids. The secreted protein is a neuroprotective factor against death induced by several different types of Alzheimer's disease genes. Humanin protects neuronal cells from damage caused by Alzheimer's disease genes, specifically APP (amyloid precursor protein). Humanin acts as a ligand for formyl peptide receptor-like 1 (FPRL1) with APP and utilizes its neuroprotective effects by inhibiting FPRL1 access to APP. The peptide prevents Bax translocation from cytosol to mitochondria. Humanin expression levels may be dependent on defects in energy production in muscles with mitochondrial abnormalities. The peptide has been detected in muscles of patients with the mitochondrial disease chronic progressive external ophthalmoplegia (CPEO). Humanin is mainly expressed in the kidney, heart, liver, testis and skeletal muscles.

**Humanin Polyclonal Antibody - Additional Information****Other Names**

Humanin, Humanin mitochondrial, HNM, MT-RNR2 ([http://www.genenames.org/cgi-bin/gene\\_symbol\\_report?hgnc\\_id=7471](http://www.genenames.org/cgi-bin/gene_symbol_report?hgnc_id=7471))  
HGNC:7471

**Target/Specificity**

Expressed in the heart, skeletal muscles, kidney and liver. Lesser but significant expression is observed in the brain and the gastrointestinal tract. Expressed in the AD brain, where it is found in

some of the large intact neurons of the occipital lobes and small and round reactive glial cells in the hippocampus.

**Dilution**

IHC-P ~ ~ N/A  
IHC-F ~ ~ N/A  
IF ~ ~ 1:50 ~ 200  
ICC ~ ~ N/A  
E ~ ~ N/A

**Format**

0.01M TBS(pH7.4), 0.09% (W/V) sodium azide and 50% Glyce

**Storage**

Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

**Humanin Polyclonal Antibody - Protein Information**

**Name** MT-RNR2 ([HGNC:7471](#))

**Function**

Plays a role as a neuroprotective factor (PubMed:[11371646](http://www.uniprot.org/citations/11371646), PubMed:[11717357](http://www.uniprot.org/citations/11717357), PubMed:[12154011](http://www.uniprot.org/citations/12154011), PubMed:[12787071](http://www.uniprot.org/citations/12787071), PubMed:[12860203](http://www.uniprot.org/citations/12860203), PubMed:[19386761](http://www.uniprot.org/citations/19386761)). Protects against neuronal cell death induced by multiple different familial Alzheimer disease genes and amyloid-beta proteins in Alzheimer disease (PubMed:[11371646](http://www.uniprot.org/citations/11371646), PubMed:[11717357](http://www.uniprot.org/citations/11717357), PubMed:[12154011](http://www.uniprot.org/citations/12154011), PubMed:[12787071](http://www.uniprot.org/citations/12787071), PubMed:[12860203](http://www.uniprot.org/citations/12860203), PubMed:[19386761](http://www.uniprot.org/citations/19386761)). Mediates its neuroprotective effect by interacting with a receptor complex composed of IL6ST/GP130, IL27RA/WSX1 and CNTFR (PubMed:[19386761](http://www.uniprot.org/citations/19386761)). Also acts as a ligand for G-protein coupled receptors FPR2/FPRL1 and FPR3/FPRL2 (PubMed:[15465011](http://www.uniprot.org/citations/15465011), PubMed:[27349871](http://www.uniprot.org/citations/27349871)). Also inhibits amyloid-beta protein 42 fibril formation (PubMed:[28282805](http://www.uniprot.org/citations/28282805)). Suppresses apoptosis by binding to BAX and preventing the translocation of BAX from the cytosol to mitochondria (PubMed:[12732850](http://www.uniprot.org/citations/12732850), PubMed:[26990160](http://www.uniprot.org/citations/26990160)). 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 (PubMed:[15661737](http://www.uniprot.org/citations/15661737)). Forms fibers with BAX and also with BID, inducing BAX and BID conformational changes and sequestering them into the fibers which prevents their activation (PubMed:[31690630](http://www.uniprot.org/citations/31690630), PubMed:[33106313](http://www.uniprot.org/citations/33106313)). 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 (PubMed:<a href="http://www.uniprot.org/citations/15661735" target="\_blank">15661735</a>). Plays a role in up-regulation of anti-apoptotic protein BIRC6/APOLLON, leading to inhibition of neuronal cell death (PubMed:<a href="http://www.uniprot.org/citations/25138702" target="\_blank">25138702</a>). Binds to IGFBP3 and specifically blocks IGFBP3-induced cell death (PubMed:<a href="http://www.uniprot.org/citations/14561895" target="\_blank">14561895</a>, PubMed:<a href="http://www.uniprot.org/citations/26216267" target="\_blank">26216267</a>). Competes with importin KPNB1 for binding to IGFBP3 which is likely to block IGFBP3 nuclear import (PubMed:<a href="http://www.uniprot.org/citations/26216267" target="\_blank">26216267</a>). Induces chemotaxis of mononuclear phagocytes via FPR2/FPRL1 (PubMed:<a href="http://www.uniprot.org/citations/15153530" target="\_blank">15153530</a>). 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 (PubMed:<a href="http://www.uniprot.org/citations/15153530" target="\_blank">15153530</a>). Protects retinal pigment epithelium (RPE) cells against oxidative stress-induced and endoplasmic reticulum (ER) stress-induced apoptosis (PubMed:<a href="http://www.uniprot.org/citations/26990160" target="\_blank">26990160</a>, PubMed:<a href="http://www.uniprot.org/citations/27783653" target="\_blank">27783653</a>). Promotes mitochondrial biogenesis in RPE cells following oxidative stress and promotes STAT3 phosphorylation which leads to inhibition of CASP3 release (PubMed:<a href="http://www.uniprot.org/citations/26990160" target="\_blank">26990160</a>). Also reduces CASP4 levels in RPE cells, suppresses ER stress-induced mitochondrial superoxide production and plays a role in up-regulation of mitochondrial glutathione (PubMed:<a href="http://www.uniprot.org/citations/27783653" target="\_blank">27783653</a>). Reduces testicular hormone deprivation-induced apoptosis of germ cells at the nonandrogen-sensitive stages of the seminiferous epithelium cycle (PubMed:<a href="http://www.uniprot.org/citations/19952275" target="\_blank">19952275</a>). 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 pro-inflammatory cytokines IL1B and IL18 (PubMed:<a href="http://www.uniprot.org/citations/32923762" target="\_blank">32923762</a>). 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 (PubMed:<a href="http://www.uniprot.org/citations/30029058" target="\_blank">30029058</a>). Inhibits the inflammatory response in astrocytes (PubMed:<a href="http://www.uniprot.org/citations/23277413" target="\_blank">23277413</a>). Increases the expression of PPARGC1A/PGC1A in pancreatic beta cells which promotes mitochondrial biogenesis (PubMed:<a href="http://www.uniprot.org/citations/29432738" target="\_blank">29432738</a>). Increases insulin sensitivity (PubMed:<a href="http://www.uniprot.org/citations/19623253" target="\_blank">19623253</a>).

### Cellular Location

Secreted. Cytoplasm. Cell projection, cilium, flagellum. Nucleus Mitochondrion. Note=Localizes to the sperm flagellum where it is highly concentrated in the midpiece (PubMed:20542501, PubMed:30920769). Detected in the cytoplasm and nucleus of spermatocytes and spermatids (PubMed:20542501). Also detected in sperm mitochondria (PubMed:20542501). In retinal pigment epithelium cells, detected in cytoplasm and mitochondria (PubMed:26990160)

### Tissue Location

Expressed in testis, seminal plasma and sperm (at protein level) (PubMed:20542501, PubMed:30920769). Higher seminal plasma levels are associated with normospermia than with oligospermia, asthenospermia or oligoasthenospermia (at protein level) (PubMed:30920769). Higher sperm levels are associated with normospermia than with asthenospermia (at protein level) (PubMed:30920769) Expressed in retinal epithelial cells (at protein level) (PubMed:26990160). Expressed in the heart, skeletal muscle, kidney and liver. Lesser but significant expression is observed in the brain and the gastrointestinal tract. Expressed in the AD brain, where it is found in

some of the large intact neurons of the occipital lobes and small and round reactive glial cells in the hippocampus

### **Humanin Polyclonal Antibody - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### **Humanin Polyclonal Antibody - Images**