

Gcn1l1 Rabbit pAb

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Catalog # AP55130

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	Q92616
Predicted	Rat, Dog, Human, Mouse, Horse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	292710
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Gcn1l1
Epitope Specificity	751-850/2671
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Cytoplasmic
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	GCN1L1 is a 2,671 amino acid protein that is ubiquitously expressed and belongs to the GCN1 family. Functioning as a translation activator, GCN1L1 interacts with IMPACT to regulate GCN2 kinase activity. GCN1L1 contains 24 HEAT repeats and is encoded by a gene that maps to human chromosome 12q24.23. Chromosome 12 encodes over 1,100 genes and comprises approximately 4.5% of the human genome. Chromosome 12 is associated with a variety of diseases and afflictions, including hypochondrogenesis, achondrogenesis, Kniest dysplasia, Noonan syndrome and trisomy 12p, which causes facial developmental defects and seizure disorders.

Additional Information

Gene ID	10985
Other Names	Stalled ribosome sensor GCN1, GCN1 eIF-2-alpha kinase activator homolog {ECO:0000312 HGNC:HGNC:4199}, GCN1-like protein 1, HsGCN1, GCN1 {ECO:0000303 PubMed:9234705, ECO:0000312 HGNC:HGNC:4199}
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,ICC/IF=1:100-500,IF=1:100-500,ELISA=1:5000-10000
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.

Protein Information

Name	GCN1 {ECO:0000303 PubMed:9234705, ECO:0000312 HGNC:HGNC:4199}
Function	Ribosome collision sensor that plays a key role in the RNF14- RNF25 translation quality control pathway, a pathway that takes place when a ribosome has stalled during translation, and which promotes ubiquitination and degradation of translation factors on stalled ribosomes (PubMed:32610081, PubMed:36638793, PubMed:37651229, PubMed:37951215, PubMed:37951216). Directly binds to the ribosome and acts as a sentinel for colliding ribosomes: activated following ribosome stalling and promotes recruitment of RNF14, which directly ubiquitinates EEF1A1/eEF1A, leading to its degradation (PubMed:36638793, PubMed:37951215, PubMed:37951216). In addition to EEF1A1/eEF1A, the RNF14-RNF25 translation quality control pathway mediates degradation of ERF1/eRF1 and ubiquitination of ribosomal protein (PubMed:36638793, PubMed:37651229). GCN1 also acts as a positive activator of the integrated stress response (ISR) by mediating activation of EIF2AK4/GCN2 in response to amino acid starvation (By similarity). Interaction with EIF2AK4/GCN2 on translating ribosomes stimulates EIF2AK4/GCN2 kinase activity, leading to phosphorylation of eukaryotic translation initiation factor 2 (eIF-2-alpha/eIF2S1) (By similarity). EIF2S1/eIF-2-alpha phosphorylation converts EIF2S1/eIF-2-alpha into a global protein synthesis inhibitor, leading to a global attenuation of cap-dependent translation, and thus to a reduced overall utilization of amino acids, while concomitantly initiating the preferential translation of ISR-specific mRNAs, such as the transcriptional activator ATF4, and hence allowing ATF4-mediated reprogramming of amino acid biosynthetic gene expression to alleviate nutrient depletion (By similarity).
Cellular Location	Cytoplasm {ECO:0000250 UniProtKB:E9PVA8}. Note=Associates with ribosomes in undifferentiated neuroblastoma cells and increases after neuronal differentiation {ECO:0000250 UniProtKB:E9PVA8}
Tissue Location	Ubiquitously expressed (PubMed:9039502). Expressed in skeletal muscles, ovary and testis (PubMed:9234705)

Background

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Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.