

GCN2 Antibody
Rabbit Polyclonal Antibody
Catalog # ALS12046

Specification

GCN2 Antibody - Product Information

Application	IHC
Primary Accession	O9P2K8
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	187kDa KDa

GCN2 Antibody - Additional Information

Gene ID 440275

Other Names

Eukaryotic translation initiation factor 2-alpha kinase 4, 2.7.11.1, GCN2-like protein, EIF2AK4, GCN2, KIAA1338

Target/Specificity

Recombinant partial protein corresponding to a. a.120-330 of human GCN2.

Reconstitution & Storage

Aliquot and store at -20°C. Minimize freezing and thawing.

Precautions

GCN2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

GCN2 Antibody - Protein Information

Name EIF2AK4 ([HGNC:19687](#))

Synonyms GCN2, KIAA1338

Function

Metabolic-stress sensing protein kinase that phosphorylates the alpha subunit of eukaryotic translation initiation factor 2 (EIF2S1/eIF-2-alpha) in response to low amino acid availability (PubMed:25329545, PubMed:32610081). Plays a role as an activator of the integrated stress response (ISR) required for adaptation to amino acid starvation (By similarity). EIF2S1/eIF-2-alpha phosphorylation in response to stress 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 (PubMed:<a

<http://www.uniprot.org/citations/32610081> target="_blank">32610081). Binds uncharged tRNAs (By similarity). Required for the translational induction of protein kinase PRKCH following amino acid starvation (By similarity). Involved in cell cycle arrest by promoting cyclin D1 mRNA translation repression after the unfolded protein response pathway (UPR) activation or cell cycle inhibitor CDKN1A/p21 mRNA translation activation in response to amino acid deprivation (PubMed:26102367). Plays a role in the consolidation of synaptic plasticity, learning as well as formation of long-term memory (By similarity). Plays a role in neurite outgrowth inhibition (By similarity). Plays a proapoptotic role in response to glucose deprivation (By similarity). Promotes global cellular protein synthesis repression in response to UV irradiation independently of the stress-activated protein kinase/c-Jun N-terminal kinase (SAPK/JNK) and p38 MAPK signaling pathways (By similarity). Plays a role in the antiviral response against alphavirus infection; impairs early viral mRNA translation of the incoming genomic virus RNA, thus preventing alphavirus replication (By similarity).

Cellular Location

Cytoplasm {ECO:0000250|UniProtKB:Q9QZ05}.

Tissue Location

Widely expressed (PubMed:10504407). Expressed in lung, smooth muscle cells and macrophages (PubMed:24292273)

Volume

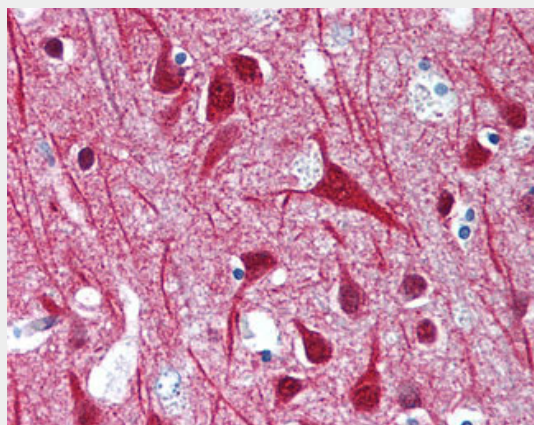
50 μ l

GCN2 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](#)

GCN2 Antibody - Images



Anti-EIF2AK4 / GCN2 antibody IHC of human brain, cortex.

GCN2 Antibody - Background

Can phosphorylate the alpha subunit of EIF2 and may mediate translational control.

GCN2 Antibody - References

- Zody M.C., et al. Nature 440:671-675(2006).
Nagase T., et al. DNA Res. 7:65-73(2000).
Bechtel S., et al. BMC Genomics 8:399-399(2007).
Ota T., et al. Nat. Genet. 36:40-45(2004).
Berlanga J.J., et al. Eur. J. Biochem. 265:754-762(1999).