

Phospho-GCN2 (T899) Antibody

Rabbit mAb Catalog # AP90142

Specification

Phospho-GCN2 (T899) Antibody - Product Information

Application WB
Primary Accession Q9P2K8
Clonality Monoclonal

Other Names

GCN2-like protein; GCN2; KIAA1338; EIF2AK4;

Isotype Rabbit IgG
Host Rabbit
Calculated MW 186911 Da

Phospho-GCN2 (T899) Antibody - Additional Information

Dilution WB~~1:1000

Purification Affinity-chromatography

Immunogen A synthesized peptide derived from human

Phospho-GCN2 (T899)

Description This gene encodes a member of a family of

kinases that phosphorylate the alpha subunit of eukaryotic translation initiation

factor-2 (EIF2), resulting in the

downregulaton of protein synthesis. The encoded protein responds to amino acid deprivation by binding uncharged transfer RNAs. It may also be activated by glucose deprivation and viral infection. Mutations in this gene have been found in individuals

suffering from autosomal recessive pulmonary venoocclusive-disease-2.

Storage Condition and Buffer Rabbit IgG in phosphate buffered saline ,

pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid

freeze / thaw cycle.

Phospho-GCN2 (T899) 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: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)

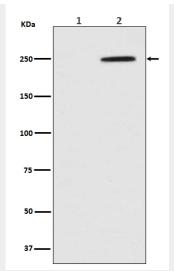
Phospho-GCN2 (T899) Antibody - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- <u>Immunohistochemistry</u>
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Phospho-GCN2 (T899) Antibody - Images





Western blot analysis of Phospho-GCN2 (Thr899) in (1) HeLa cell lysate; (2) HeLa cell lysate treated with Calyculin.