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GCN2 Antibody (Center F1116) Blocking Peptide

Synthetic peptide
Catalog # BP8062a

Specification

GCN2 Antibody (Center F1116) Blocking Peptide - Product Information

Primary Accession Q9P2K8

GCN2 Antibody (Center F1116) Blocking Peptide - Additional Information

Gene ID 440275

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

Target/Specificity
The synthetic peptide sequence is selected from aa 1116~1131 of human GCN2.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

GCN2 Antibody (Center F1116) Blocking Peptide - 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)

GCN2 Antibody (Center F1116) Blocking Peptide - Protocols

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

- Blocking Peptides

GCN2 Antibody (Center F1116) Blocking Peptide - Images

GCN2 Antibody (Center F1116) Blocking Peptide - Background

EIF2AK4 belongs to a family of kinases that phosphorylate the alpha subunit of eukaryotic translation initiation factor-2 (EIF2S1; MIM 603907) to downregulate protein synthesis in response to varied cellular stresses (Berlanga et al., 1999 [PubMed 10504407]).[supplied by OMIM]

GCN2 Antibody (Center F1116) Blocking Peptide - References

Blume-Jensen P, et al. Nature 2001. 411: 355.Cantrell D, J. Cell Sci. 2001. 114: 1439.Jhiang S Oncogene 2000. 19: 5590.Manning G, et al. Science 2002. 298: 1912.Moller, D, et al. Am. J. Physiol. 1994. 266: C351-C359.Robertson, S. et al. Trends Genet. 2000. 16: 368.Robinson D, et al. Oncogene 2000. 19: 5548.Van der Ven, P, et al. Hum. Molec. Genet. 1993. 2: 1889.Vanhaesebroeck, B, et al. Biochem. J. 2000. 346: 561.Van Weering D, et al. Recent Results Cancer Res. 1998. 154: 271.