

Rabbit GCN2 Polyclonal Antibody | anti-GCN2 antibody

Phospho-GCN2 (Thr899) Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA329721	Rabbit	Human, Mouse, Rat Predicted Reactivity: Pig (100%), Bovine (100%), Horse (100%), Sheep (100%), Rabbit (91%), Dog (100%), Chicken (91%)	ELISA, Immunohistochemistry, Western Blot

PRODUCT SYNONYMS

GCN2; Polyclonal Antibody; Phospho-GCN2 (Thr899) Antibody; E2AK4_HUMAN; Eif2ak4; Eukaryotic Translation Initiation Factor 2 alpha kinase 4; Eukaryotic translation initiation factor 2-alpha kinase 4; GCN2 eIF2alpha kinase; GCN2 like protein; GCN2-like protein; KIAA1338; MGCN2; anti-GCN2 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat Predicted Reactivity: Pig (100%), Bovine (100%), Horse (100%), Sheep (100%), Rabbit (91%), Dog (100%), Chicken (91%)
Clonality	Polyclonal
Isotype	Rabbit IgG
Specificity	Phospho-GCN2 (Thr899) Antibody detects endogenous levels of GCN2 only when phosphorylated at Thr899. Tissue Specificity: Widely expressed. Expressed in lung, smooth muscle cells and macrophages.
Purity/Purification	The antibody is from purified rabbit serum by affinity purification via sequential chromatography on phospho-peptide and non-phospho-peptide affinity columns.
Form/Format	Liquid. Rabbit IgG in phosphate buffered saline, pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Applicable Applications for anti-GCN2 antibody	ELISA (Peptide ELISA), IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	A synthesized peptide derived from human GCN2 around the phosphorylation site of Thr899.
Conjugation	Unconjugated
Fragment	Fab fragment
Post Translational Modifications	Autophosphorylated; autophosphorylation on Thr-899 is increased upon amino acid starvation and in UV irradiation cells and inhibited in presence of IMPACT.
Subunit Structure	Homodimer; homodimerization is important for kinase activation by uncharged tRNAs. Interacts with GCN1; this interaction stimulates EIF2AK4/GCN2 kinase activity and is impaired by IMPACT upon a variety of stress conditions, such as amino acid depletion, UV-C irradiation, proteasome inhibitor treatment and glucose deprivation. Interacts with DNAJC3; this interaction inhibits EIF2AK4/GCN2 kinase activity during endoplasmic reticulum (ER), hypothermic and amino acid-starving stress conditions.
Similarity	The histidyl-tRNA synthetase-like region and protein kinase domains are necessary for eIF-2-alpha kinase activity and eIF-2-alpha-mediated translational control. The histidyl-tRNA synthetase-like domain is necessary for binding to uncharged tRNAs. Kinase domain 1 is a degenerate kinase domain. Belongs to the protein kinase superfamily. Ser/Thr protein kinase family. GCN2 subfamily.
Subcellular Location	Cytoplasm.
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

IMAGES



IHC (Immunohistochemistry)
At 1/200 staining Human liver cancer tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



IHC (Immunohistochemisry)
At 1/200 staining Mouse brain tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



IHC (Immunohiostchemistry)
Staining Rat lung tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



WB (Western Blot)
Western blot analysis GCN2 (Phospho-Thr899) using heatshock treated HeLa whole cell lysates. -/+ means absence or presence of N peptide/non-phospho peptide) and P peptide(phospho peptide).

ADDITIONAL INFORMATION

Related Product Information for anti-GCN2 antibody	Metabolic-stress sensing protein kinase that phosphorylates the alpha subunit of eukaryotic translation initiation factor 2 (eIF-2-alpha/EIF2S1) on 'Ser-52' in response to low amino acid availability. Plays a role as an activator of the integrated stress response (ISR) required for adapataion to amino acid starvation. Converts phosphorylated eIF-2-alpha/EIF2S1 either to a competitive inhibitor of the translation initiation factor eIF-2B, leading to a global protein synthesis repression, and thus to a reduced overall utilization of amino acids, or to a translational initiation activation of specific mRNAs, such as the transcriptional activator ATF4, and hence allowing ATF4-mediated reprogramming of amino acid biosynthetic gene expression to alleviate nutrient depletion. Binds uncharged tRNAs (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. Plays a role in the consolidation of synaptic plasticity, learning as well as formation of long-term memory. Plays a role in neurite outgrowth inhibition. Plays a proapoptotic role in response to glucose deprivation. 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). (Microbial infection) Plays a role in modulating the adaptive immune response to yellow fever virus infection; promotes dendritic cells to initiate autophagy and antigene presentation to both CD4 (+) and CD8 (+) T-cells under amino acid starvation.
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NCBI AND UNIPROT INFORMATION

NCBI GI #	296439368
NCBI GeneID	440275
UniProt Accession #	Q9P2K8; Q69YL7; Q6DC97; Q96GN6; Q9H5K1; Q9NSQ3; Q9NSZ5; Q9UJ56; C9JEC4
NCBI Official Full Name	Eukaryotic translation initiation factor 2-alpha kinase 4
NCBI Official Synonym Full Names	eukaryotic translation initiation factor 2 alpha kinase 4
NCBI Official Symbol	EIF2AK4
NCBI Official Synonym Symbols	GCN2; PVOD2
NCBI Protein Information	eukaryotic translation initiation factor 2-alpha kinase 4; GCN2-like protein; GCN2 eIF2alpha kinase; general control nonderepressible 2
UniProt Protein Name	Eukaryotic translation initiation factor 2-alpha kinase 4

UniProt Gene Name	EIF2AK4
UniProt Synonym Gene Names	GCN2; KIAA1338
UniProt Entry Name	E2AK4_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/polyclonal/gcn2-antibody-peptide-elisa-immunohistochemistry-western-blot-elisa/329721>