

KD-Validated Anti-EIF2AK4 Rabbit Monoclonal Antibody
Rabbit monoclonal antibody
Catalog # AGI1515**Specification****KD-Validated Anti-EIF2AK4 Rabbit Monoclonal Antibody - Product Information**

Application	WB, FC
Primary Accession	Q9P2K8
Reactivity	Rat, Human
Clonality	Monoclonal
Isotype	Rabbit IgG
Calculated MW	Predicted, 187 kDa , observed, 187 kDa KDa
Gene Name	EIF2AK4
Aliases	EIF2AK4; Eukaryotic Translation Initiation Factor 2 Alpha Kinase 4; GCN2; KIAA1338; EIF-2-Alpha Kinase GCN2; GCN2-Like Protein; Eukaryotic Translation Initiation Factor 2-Alpha Kinase 4; General Control Nonderepressible; GCN2 EIF2alpha Kinase; EIF-2-Alpha Kinase; EC 2.7.11.1; PVOD2 A synthesized peptide derived from human GCN2
Immunogen	

KD-Validated Anti-EIF2AK4 Rabbit Monoclonal Antibody - Additional Information

Gene ID	440275
Other Names	
eIF-2-alpha kinase GCN2, GCN2-like protein, EIF2AK4 (http://www.genenames.org/cgi-bin/gene_symbol_report?hgnc_id=19687 target="_blank">HGNC:19687), GCN2, KIAA1338	

KD-Validated Anti-EIF2AK4 Rabbit Monoclonal 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](http://www.uniprot.org/citations/25329545), PubMed: [32610081](http://www.uniprot.org/citations/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

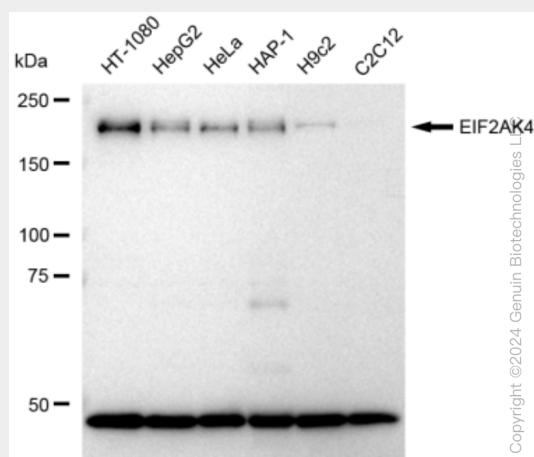
Widely expressed (PubMed:10504407). Expressed in lung, smooth muscle cells and macrophages (PubMed:24292273)

KD-Validated Anti-EIF2AK4 Rabbit Monoclonal Antibody - Protocols

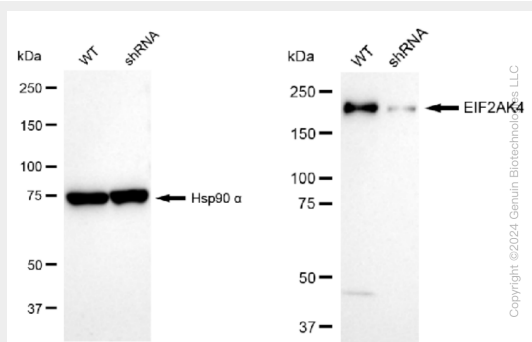
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

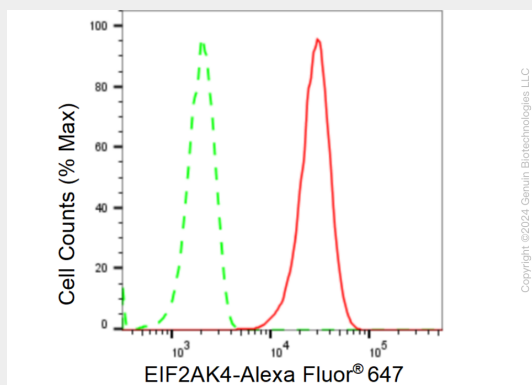
KD-Validated Anti-EIF2AK4 Rabbit Monoclonal Antibody - Images



Western blotting analysis using anti-EIF2AK4 antibody (Cat#AGI1515). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-EIF2AK4 antibody (Cat#AGI1515, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Western blotting analysis using anti-EIF2AK4 antibody (Cat#AGI1515). EIF2AK4 expression in wild type (WT) and EIF2AK4 shRNA knockdown (KD) HeLa cells with 30 µg of total cell lysates. Hsp90 α serves as a loading control. The blot was incubated with anti-EIF2AK4 antibody (Cat#AGI1515, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Flow cytometric analysis of EIF2AK4 expression in HT-1080 cells using EIF2AK4 antibody (Cat#AGI1515, 1:2,000). Green, isotype control; red, EIF2AK4.