

Rabbit anti-Human HRI (EIF2AK1) Polyclonal Antibody | anti-EIF2AK1 antibody

HRI (EIF2AK1) Antibody (Center)

CATALOG # AAA286233	HOST Rabbit	REACTIVITY Human	APPLICATIONS Immunohistochemistry, ELISA, Western Blot
-------------------------------	-----------------------	----------------------------	--

PRODUCT SYNONYMS

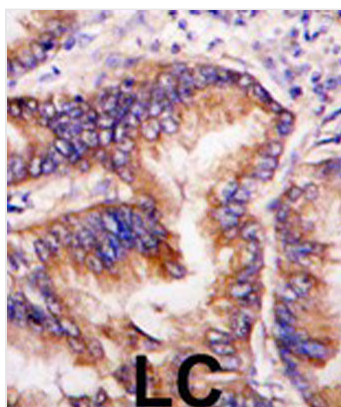
HRI (EIF2AK1); Polyclonal Antibody; HRI (EIF2AK1) Antibody (Center); HRI; KIAA1369; anti-EIF2AK1 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human
Clonality	Polyclonal
Isotype	Rabbit Ig
Specificity	This HRI (EIF2AK1) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 267-296 amino acids from the Central region of human HRI (EIF2AK1).
Purity/Purification	Purified Rabbit Polyclonal Antibody (Pab)
Form/Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Sequence Positions	267-296
Sequence Length	629
Applicable Applications for anti-EIF2AK1 antibody	IHC (Immunohistochemistry), ELISA, WB (Western Blot)
Function	Inhibits protein synthesis at the translation initiation level, in response to various stress conditions, including oxidative stress, heme deficiency, osmotic shock and heat shock. Exerts its function through the phosphorylation of EIF2S1 at 'Ser- 48' and 'Ser-51', thus preventing its recycling. Binds heme forming a 1:1 complex through a cysteine thiolate and histidine nitrogenous coordination. This binding occurs with moderate affinity, allowing it to sense the heme concentration within the cell. Thanks to this unique heme-sensing capacity, plays a crucial role to shut off protein synthesis during acute heme-deficient conditions. In red blood cells (RBCs), controls hemoglobin synthesis ensuring a coordinated regulation of the synthesis of its heme and globin moieties. Thus plays an essential protective role for RBC survival in anemias of iron deficiency. Similarly, in hepatocytes, involved in heme-mediated translational control of CYP2B and CYP3A and possibly other hepatic P450 cytochromes. May also contain ER stress during acute heme-deficient conditions (By similarity).
Cellular Location	Cytoplasm.
Tissue Location	Expressed predominantly in erythroid cells. At much lower levels, expressed in hepatocytes (at protein level)

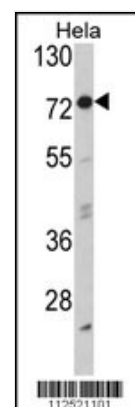
Function	Metabolic-stress sensing protein kinase that phosphorylates the alpha subunit of eukaryotic translation initiation factor 2 (EIF2S1/eIF-2-alpha) in response to various stress conditions (PubMed: , PubMed:). Key activator of the integrated stress response (ISR) required for adaptation to various stress, such as heme deficiency, oxidative stress, osmotic shock, mitochondrial dysfunction and heat shock (PubMed: , PubMed:). EIF2S1/eIF-2-alpha phosphorylation in response to stress converts EIF2S1/eIF-2-alpha in a global protein synthesis inhibitor, leading to a global attenuation of cap-dependent translation, while concomitantly initiating the preferential translation of ISR-specific mRNAs, such as the transcriptional activator ATF4, and hence allowing ATF4-mediated reprogramming (PubMed:32132706, PubMed:). Acts as a key sensor of heme-deficiency: in normal conditions, binds heme via a cysteine thiolate and histidine nitrogenous coordination, leading to inhibit the protein kinase activity (By similarity). This binding occurs with moderate affinity, allowing it to sense the heme concentration within the cell: heme depletion relieves inhibition and stimulates kinase activity, activating the ISR (By similarity). Thanks to this unique heme-sensing capacity, plays a crucial role to shut off protein synthesis during acute heme-deficient conditions (By similarity). In red blood cells (RBCs), controls hemoglobin synthesis ensuring a coordinated regulation of the synthesis of its heme and globin moieties (By similarity). It thereby plays an essential protective role for RBC survival in anemias of iron deficiency (By similarity). Similarly, in hepatocytes, involved in heme-mediated translational control of CYP2B and CYP3A and possibly other hepatic P450 cytochromes (By similarity). May also regulate endoplasmic reticulum (ER) stress during acute heme- deficient conditions (By similarity). Also activates the ISR in response to mitochondrial dysfunction: HRI/EIF2AK1 protein kinase activity is activated upon binding to the processed form of DELE1 (S- DELE1), thereby promoting the ATF4-mediated reprogramming (PubMed: , PubMed:).
Preparation and Storage	Maintain refrigerated at 2-8 degree C for up to 2 weeks. For long term storage store at -20 degree C in small aliquots to prevent freeze-thaw cycles.

IMAGES



IHC (Immunohistochemistry)

Formalin-fixed and paraffin-embedded human lung carcinoma tissue reacted with EIF2AK1 antibody (Center), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



WB (Western Blot)

Western blot analysis of EIF2AK1 Antibody (Center) in HeLa cell line lysates (35ug/lane). EIF2AK1 (arrow) was detected using the purified Pab.

ADDITIONAL INFORMATION

Related Product Information for anti-EIF2AK1 antibody	The HRI gene is localized to 7p22 where its 3' end slightly overlaps the 3' end of the gene JTV1. The two genes are transcribed from opposite strands. Studies in rat and rabbit suggest that the HRI gene product phosphorylates the alpha subunit of eukaryotic initiation factor 2. Its kinase activity is induced by low levels of heme and inhibited by the presence of heme.
Product Categories/Family for anti-EIF2AK1 antibody	Signal Transduction
References	Hwang S.-Y., Mol. Cells 10:584-591(2000). Omasa T., DNA Seq. 13:133-137(2002).

NCBI AND UNIPROT INFORMATION

NCBI GI #	197245437
------------------	-----------

NCBI GeneID	27102
NCBI Accession #	NP_001127807.1; NP_055228.2
NCBI GenBank Nucleotide #	NM_001134335.1
UniProt Accession #	Q9BQI3; Q549K6; Q8NBW3; Q9HC02; Q9NYE0; Q9P0V6; Q9P1J5; Q9P2H8; Q9UHG4; A8K2R2
Molecular Weight	71106
NCBI Official Full Name	eukaryotic translation initiation factor 2-alpha kinase 1 isoform b
NCBI Official Synonym Full Names	eukaryotic translation initiation factor 2-alpha kinase 1
NCBI Official Symbol	EIF2AK1
NCBI Official Synonym Symbols	HCR; HRI
NCBI Protein Information	eukaryotic translation initiation factor 2-alpha kinase 1
UniProt Protein Name	Eukaryotic translation initiation factor 2-alpha kinase 1
UniProt Gene Name	EIF2AK1
UniProt Synonym Gene Names	HRI; KIAA1369; HCR
UniProt Entry Name	E2AK1_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.

AAA Biotech | Tel: +1 (619) 604-9440 | Fax: +1 (619) 604-9441 | contact@aaabiotech.com

Online datasheet: <https://stage.aaabiotech.com/polyclonal/hri-eif2ak1-antibody-immunohistochemistry-western-blot-elisa/286233>