

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

HRI Antibody (N-term)

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA28727	Rabbit	Human	Western Blot, ELISA, Immunohistochemistry

PRODUCT SYNONYMS

HRI; Polyclonal Antibody; HRI Antibody (N-term); Eukaryotic translation initiation factor 2-alpha kinase 1; Heme-controlled repressor; HCR; Heme-regulated eukaryotic initiation factor eIF-2-alpha kinase; Heme-regulated inhibitor; Hemin-sensitive initiation factor 2-alpha kinase; EIF2AK1; KIAA1369; anti-EIF2AK1 antibody

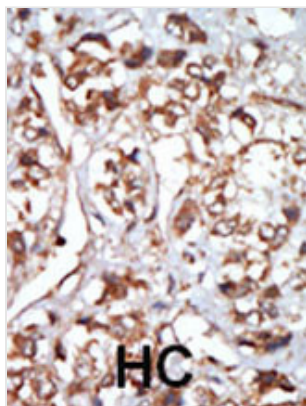
PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human
Clonality	Polyclonal
Isotype	Rabbit IgG
Specificity	This HRI antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1-30 amino acids from the N-terminal region of human HRI.
Purity/Purification	Purified Rabbit Polyclonal Antibody (Pab)
Form/Format	Supplied in PBS with 0.09% (W/V) sodium azide; prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Sequence Positions	1-30
Sequence Length	629
Applicable Applications for anti-EIF2AK1 antibody	WB (Western Blot), ELISA, IHC (Immunohistochemistry)
Application Notes	WB~~1:1000 IHC-P~~1:50~100
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:32132706, PubMed:32132707). 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:32132706, PubMed:32132707). 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:32132707). 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:32132706, PubMed:32132707).

Preparation and Storage

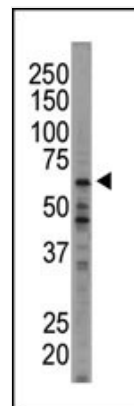
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

IMAGES



IHC (Immunohistochemistry)

Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.



WB (Western Blot)

Western blot analysis of anti-HRI Pab AAA28727 in A375 cell lysate. HRI (arrow) was detected using purified Pab. Secondary HRP-anti-rabbit was used for signal visualization with chemiluminescence.

ADDITIONAL INFORMATION

Related Product Information for anti-EIF2AK1 antibody

Background: 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 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

Rafie-Kolpin, M., et al., Biochemistry 42(21):6536-6544 (2003).
Chen, J.J., et al., Trends Biochem. Sci. 20(3):105-108 (1995).

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	Calculated MW: 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.

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Online datasheet: <https://stage.aaabiotech.com/polyclonal/hri-antibody-western-blot-immunohistochemistry-elisa/28727>