

PERK (EIF2AK3) Antibody (Center)
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8150c

Specification

PERK (EIF2AK3) Antibody (Center) - Product Information

Application	WB, IHC-P,E
Primary Accession	O9NZJ5
Other Accession	O9Z1Z1 , O9Z2B5
Reactivity	Human
Predicted	Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	125216

PERK (EIF2AK3) Antibody (Center) - Additional Information

Gene ID 9451

Other Names

Eukaryotic translation initiation factor 2-alpha kinase 3, PRKR-like endoplasmic reticulum kinase, Pancreatic eIF2-alpha kinase, HsPEK, EIF2AK3, PEK, PERK

Target/Specificity

This PERK antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide selected from the Center region of human EIF2AK3.

Dilution

WB~~1:1000
IHC-P~~1:10~50

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.

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.

Precautions

PERK (EIF2AK3) Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

PERK (EIF2AK3) Antibody (Center) - Protein Information

Name EIF2AK3

Synonyms PEK, PERK

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. Key activator of the integrated stress response (ISR) required for adaptation to various stress, such as unfolded protein response (UPR) and low amino acid availability (By similarity). 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 activators ATF4 and QRI1, and hence allowing ATF4- and QRI1-mediated reprogramming (PubMed:[33384352](#)). Serves as a critical effector of unfolded protein response (UPR)-induced G1 growth arrest due to the loss of cyclin-D1 (CCND1). Involved in control of mitochondrial morphology and function (By similarity).

Cellular Location

Endoplasmic reticulum membrane; Single-pass type I membrane protein

Tissue Location

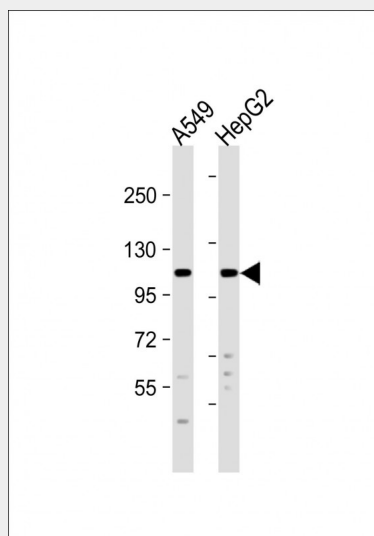
Ubiquitous. A high level expression is seen in secretory tissues

PERK (EIF2AK3) Antibody (Center) - Protocols

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

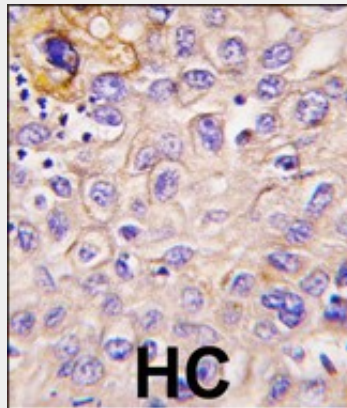
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

PERK (EIF2AK3) Antibody (Center) - Images



All lanes : Anti-EIF2AK3 Antibody (Center) at 1:1000 dilution Lane 1: A549 whole cell lysate Lane 2: HepG2 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG,

(H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 125 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with EIF2AK3 antibody (Center)(Cat.#AP8150c), 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.

PERK (EIF2AK3) Antibody (Center) - Background

EIF2AK3, a member of the GCN2 subfamily of Ser/Thr protein kinases, phosphorylates the alpha subunit of eukaryotic translation-initiation factor 2 (EIF2), leading to its inactivation and thus to a rapid reduction of translational initiation and repression of global protein synthesis. This protein serves as a critical effector of unfolded protein response (UPR)-induced G1 growth arrest due to the loss of cyclin D1. It is proposed that perturbation in protein folding in the endoplasmic reticulum (ER) promotes reversible dissociation from HSPA5/BIP and oligomerization, resulting in transautophosphorylation and kinase activity induction. Expression of this Type I membrane protein is ubiquitous, with a high level expression in secretory tissues. Defects in EIF2AK3 are the cause of Wolcott-Rallison syndrome (WRS), also known as multiple epiphyseal dysplasia with early-onset diabetes mellitus. WRS is a rare autosomal recessive disorder, characterized by permanent neonatal or early infancy insulin-dependent diabetes and, at a later age, epiphyseal dysplasia, osteoporosis, growth retardation and other multisystem manifestations, such as hepatic and renal dysfunctions, mental retardation and cardiovascular abnormalities.

PERK (EIF2AK3) Antibody (Center) - References

Delepine, M., et al., Nat. Genet. 25(4):406-409 (2000).
Shi, Y., et al., J. Biol. Chem. 274(9):5723-5730 (1999).
Sood, R., et al., Biochem. J. 346 Pt 2, 281-293 (2000).

PERK (EIF2AK3) Antibody (Center) - Citations

- [Regulation of SREBP-2 intracellular trafficking improves impaired autophagic flux and alleviates endoplasmic reticulum stress in NAFLD.](#)
- [HMGB1 induces endothelial progenitor cells apoptosis via RAGE-dependent PERK/eIF2 \$\alpha\$ pathway.](#)