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PERK Antibody (N-term Q163)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8054A

Specification

PERK Antibody (N-term Q163) - Product Information

Application	**WB, IHC-P,E**
Primary Accession	Q9NZJ5
Reactivity	**Human**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Antigen Region	**148-175**

PERK Antibody (N-term Q163) - 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 between 148-175 amino acids from the N-terminal region of human PERK.

Dilution
WB~~1:1000
IHC-P~~1:50~100

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 Antibody (N-term Q163) is for research use only and not for use in diagnostic or therapeutic procedures.

PERK Antibody (N-term Q163) - 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 QRICH1, and hence allowing ATF4- and QRICH1-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

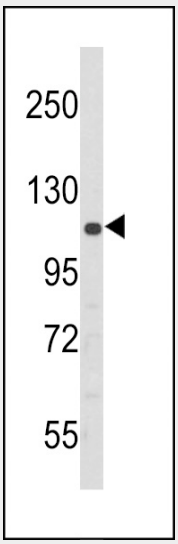
Tissue Location
Ubiquitous. A high level expression is seen in secretory tissues

PERK Antibody (N-term Q163) - Protocols

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

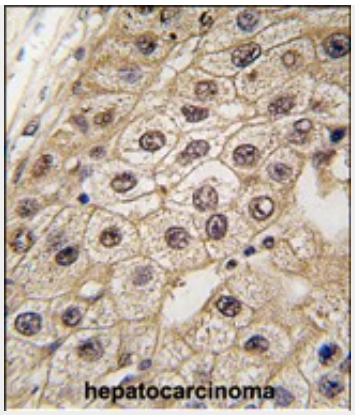
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

PERK Antibody (N-term Q163) - Images



Western blot analysis of PERK Antibody (N-term Q163) (Cat. #AP8054a) in 293 cell line lysates (35ug/lane). PERK (arrow) was detected using the purified Pab.

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Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with PERK antibody (N-term Q163) (Cat.#AP8054a), 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 Antibody (N-term Q163) - Background

PERK, 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. It likely serves as a critical effector of unfolded protein response (UPR)-induced G1 growth arrest due to the loss of cyclin D1 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 highest levels seen 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 Antibody (N-term Q163) - 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 Antibody (N-term Q163) - Citations

- Molecular mechanisms of the LPS-induced non-apoptotic ER stress-CHOP pathway.