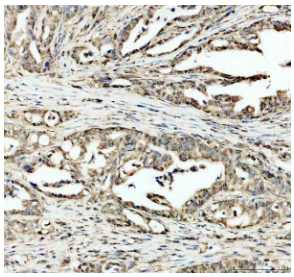
PERK Antibody / Endoplasmic Reticulum Stress Kinase Antibody (RQ4206)

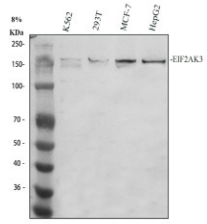
Catalog No.	Formulation	Size
RQ4206	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q9NZJ5
Applications	Western Blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Direct ELISA: 0.1-0.5ug/ml
Limitations	This PERK Antibody / Endoplasmic Reticulum Stress Kinase Antibody is available for research use only.



PERK Antibody Human Pancreatic Cancer IHC. Immunohistochemistry was performed on FFPE human pancreatic cancer tissue using PERK Antibody. Heat-induced epitope retrieval was performed in pH 8 EDTA buffer prior to incubation with the primary antibody at 2 ug/ml. Bound antibody was visualized using an HRP-conjugated goat anti-rabbit IgG secondary antibody with DAB chromogen. Moderate cytoplasmic staining is observed in the malignant glandular epithelial cells, with comparatively weaker staining in the surrounding stromal tissue, consistent with the elevated endoplasmic reticulum stress response frequently observed in pancreatic cancer. These results demonstrate that this Endoplasmic Reticulum Stress Kinase Antibody is suitable for immunohistochemical detection of PERK (EIF2AK3) in formalin-fixed, paraffin-embedded human pancreatic cancer tissue.



PERK Antibody Human Cancer Cell WB. Western blot analysis was performed using PERK Antibody. Lane 1: human K562 whole cell lysate; lane 2: human 293T whole cell lysate; lane 3: human MCF-7 whole cell lysate; lane 4: human HepG2 whole cell lysate. Proteins were separated on an 8% SDS-PAGE gel, transferred to a nitrocellulose membrane, and incubated with the primary antibody at 0.5 ug/ml overnight at 4Â°C. A specific immunoreactive band is detected at approximately 150 kDa in all tested cell lines, consistent with the commonly observed migration of glycosylated PERK, although the predicted molecular weight is approximately 125 kDa. These results demonstrate that this Endoplasmic Reticulum Stress Kinase Antibody is suitable for Western blot detection of PERK (EIF2AK3) in human cell lysates.

Description

PERK Antibody recognizes protein kinase R-like endoplasmic reticulum kinase (PERK), also known as EIF2AK3, a transmembrane serine/threonine kinase that serves as one of the principal sensors of endoplasmic reticulum stress. Under normal conditions, PERK is maintained in an inactive state through association with the endoplasmic reticulum chaperone HSPA5, also known as BiP. Accumulation of unfolded or misfolded proteins within the endoplasmic reticulum causes PERK activation through oligomerization and autophosphorylation, initiating signaling pathways that restore protein homeostasis. NSJ Bioreagents supplies PERK Antibody for reliable detection of this central regulator of the unfolded protein response in diverse research applications.

Activated PERK phosphorylates eukaryotic translation initiation factor 2 alpha, resulting in a temporary reduction in global protein synthesis while selectively enhancing translation of stress-responsive messenger RNAs, including ATF4. This adaptive response promotes expression of genes involved in protein folding, amino acid metabolism, antioxidant defense, and autophagy, helping cells survive periods of endoplasmic reticulum stress. When stress becomes prolonged or irreversible, PERK signaling also contributes to apoptosis through induction of downstream effectors such as DDIT3, commonly known as CHOP. Consequently, PERK Antibody is widely used to investigate endoplasmic reticulum stress signaling, translational control, and cellular adaptation to proteotoxic stress.

Dysregulation of PERK signaling has been implicated in numerous human diseases, including cancer, neurodegenerative disorders, diabetes mellitus, retinal degeneration, and inherited disorders caused by mutations in EIF2AK3, such as Wolcott-Rallison syndrome. Because PERK integrates signals linking protein quality control, metabolism, oxidative stress, and cell survival, it has become an important therapeutic target in both oncology and neurobiology. Researchers frequently use PERK Antibody to study activation of the unfolded protein response, interactions between endoplasmic reticulum stress pathways, and mechanisms that determine whether cells recover or undergo programmed cell death.

An PERK Antibody is a valuable reagent for investigating endoplasmic reticulum stress, unfolded protein response signaling, translational regulation, and protein homeostasis. By enabling detection of this essential stress-responsive kinase, a PERK Antibody supports research into cellular adaptation, metabolic regulation, neurodegeneration, cancer biology, and numerous diseases associated with impaired endoplasmic reticulum function.

Explore additional reagents involved in cellular signaling and protein homeostasis on our Signal Transduction Antibodies page.

Application Notes

Optimal dilution of the PERK Antibody / Endoplasmic Reticulum Stress Kinase Antibody should be determined by the researcher.

Immunogen

A recombinant human protein corresponding to amino acids R222-Q334 was used as the immunogen for the PERK antibody.

Storage

After reconstitution, the PERK antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

EIF2AK3 antibody, Eukaryotic Translation Initiation Factor 2 Alpha Kinase 3 antibody, Pancreatic EIF2 Alpha Kinase antibody, Protein Kinase R Like Endoplasmic Reticulum Kinase antibody, PRKR Like ER Kinase antibody, PEK antibody

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