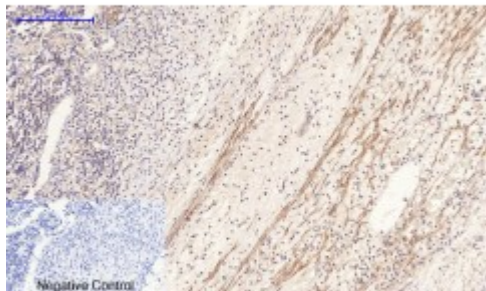


Anti-PERK antibody



Description

PERK is a protein encoded by the EIF2AK3 gene which is approximately 125,2 kDa. PERK is localised to the endoplasmic reticulum membrane. It is involved in respiratory electron transport, apoptosis modulation and signalling and animal autophagy. It phosphorylates the alpha subunit of eukaryotic translation-initiation factor 2, leading to its inactivation, and a rapid reduction of translational initiation and repression of global protein synthesis. PERK is expressed in the nervous system, liver, pancreas, lung and heart. Mutations in the EIF2AK3 gene may result in Wolcott-Rallison syndrome and diversion colitis. STJ95031 was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen. This polyclonal antibody detects endogenous levels of PERK protein only when phosphorylated at T981.

Model	STJ95031
Host	Rabbit
Reactivity	Human, Mouse, Rat
Applications	ELISA, IHC, WB
Immunogen	Synthesized peptide derived from human PERK around the non-phosphorylation site of T981.
Immunogen Region	920-1000 aa
Gene ID	9451
Gene Symbol	EIF2AK3
Dilution range	WB 1:500-1:2000IHC 1:100-1:300ELISA 1:40000
Specificity	PERK Polyclonal Antibody detects endogenous levels of PERK protein.

Tissue Specificity	Ubiquitous. A high level expression is seen in secretory tissues.
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Note	For Research Use Only (RUO).
Protein Name	Eukaryotic translation initiation factor 2-alpha kinase 3 PRKR-like endoplasmic reticulum kinase Pancreatic eIF2-alpha kinase HsPEK
Molecular Weight	125 kDa
Clonality	Polyclonal
Conjugation	Unconjugated
Isotype	IgG
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Concentration	1 mg/ml
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:3255OMIM:226980
Alternative Names	Eukaryotic translation initiation factor 2-alpha kinase 3 PRKR-like endoplasmic reticulum kinase Pancreatic eIF2-alpha kinase HsPEK
Function	Metabolic-stress sensing protein kinase that phosphorylates the alpha subunit of eukaryotic translation initiation factor 2 (eIF-2-alpha/EIF2S1) on 'Ser-52' during the unfolded protein response (UPR) and in response to low amino acid availability. Converts phosphorylated eIF-2-alpha/EIF2S1 either in a global protein synthesis inhibitor, leading to a reduced overall utilization of amino acids, or to a translation initiation activator of specific mRNAs, such as the transcriptional activator ATF4, and hence allowing ATF4-mediated reprogramming of amino acid biosynthetic gene expression to alleviate nutrient depletion. 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.
Sequence and Domain Family	The luminal domain senses perturbations in protein folding in the ER, probably through reversible interaction with HSPA5/BIP.
Cellular Localization	Endoplasmic reticulum membrane. Single-pass type I membrane protein.
Post-translational Modifications	Oligomerization of the N-terminal ER luminal domain by ER stress promotes PERK trans-autophosphorylation of the C-terminal cytoplasmic kinase domain at multiple residues including Thr-982 on the kinase activation loop . Autophosphorylated. Phosphorylated at Tyr-619 following endoplasmic reticulum stress, leading to activate its tyrosine-protein kinase activity. Dephosphorylated by PTPN1/TP1B, leading to inactivate its enzyme activity. N-glycosylated. ADP-ribosylated by PARP16 upon ER stress, which increases kinase activity.