

Mouse PINK Antibody (Center) Blocking peptide
Synthetic peptide
Catalog # BP11315c**Specification**

Mouse PINK Antibody (Center) Blocking peptide - Product InformationPrimary Accession [Q99MQ3](#)**Mouse PINK Antibody (Center) Blocking peptide - Additional Information****Gene ID** 68943**Other Names**

Serine/threonine-protein kinase PINK1, mitochondrial, BRPK, PTEN-induced putative kinase protein 1, Pink1

Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

Mouse PINK Antibody (Center) Blocking peptide - Protein Information**Name** Pink1**Function**

Serine/threonine-protein kinase which acts as a sensor of mitochondrial damage and protects against mitochondrial dysfunction during cellular stress. It phosphorylates mitochondrial proteins to coordinate mitochondrial quality control mechanisms that remove and replace dysfunctional mitochondrial components (PubMed: [24652937](http://www.uniprot.org/citations/24652937), PubMed: [24784582](http://www.uniprot.org/citations/24784582), PubMed: [25474007](http://www.uniprot.org/citations/25474007), PubMed: [32484300](http://www.uniprot.org/citations/32484300)). Depending on the severity of mitochondrial damage, activity ranges from preventing apoptosis and stimulating mitochondrial biogenesis to eliminating severely damaged mitochondria via PINK1-PRKN-dependent mitophagy (By similarity). When cellular stress results in irreversible mitochondrial damage, PINK1 accumulates at the outer mitochondrial membrane (OMM) where it phosphorylates pre-existing polyubiquitin chains at 'Ser-65', recruits PRKN from the cytosol to the OMM and activates PRKN by phosphorylation at 'Ser-65' (PubMed: [24652937](http://www.uniprot.org/citations/24652937), PubMed: [24784582](http://www.uniprot.org/citations/24784582), PubMed: [25474007](http://www.uniprot.org/citations/25474007), PubMed: [32484300](http://www.uniprot.org/citations/32484300)). Activated

PRKN then ubiquitinates VDAC1 and other OMM proteins to initiate mitophagy (By similarity). The PINK1-PRKN pathway also promotes fission of damaged mitochondria by phosphorylating and thus promoting the PRKN-dependent degradation of mitochondrial proteins involved in fission such as MFN2 (By similarity). This prevents the refusion of unhealthy mitochondria with the mitochondrial network or initiates mitochondrial fragmentation facilitating their later engulfment by autophagosomes (By similarity). Also promotes mitochondrial fission independently of PRKN and ATG7- mediated mitophagy, via the phosphorylation and activation of DNM1L (PubMed:32484300). Regulates motility of damaged mitochondria by promoting the ubiquitination and subsequent degradation of MIRO1 and MIRO2; in motor neurons, this likely inhibits mitochondrial intracellular anterograde transport along the axons which probably increases the chance of the mitochondria undergoing mitophagy in the soma (By similarity). Required for ubiquinone reduction by mitochondrial complex I by mediating phosphorylation of complex I subunit NDUFA10 (PubMed:24652937). Phosphorylates LETM1, positively regulating its mitochondrial calcium transport activity (PubMed:29123128).

Cellular Location

Mitochondrion outer membrane {ECO:0000250|UniProtKB:Q9BXM7}; Single-pass membrane protein. Mitochondrion inner membrane; Single-pass membrane protein. Cytoplasm, cytosol {ECO:0000250|UniProtKB:Q9BXM7} Note=Localizes mostly in mitochondrion and the two smaller proteolytic processed fragments localize mainly in cytosol. When mitochondria lose mitochondrial membrane potential following damage, PINK1 import is arrested, which induces its accumulation in the outer mitochondrial membrane, where it acquires kinase activity {ECO:0000250|UniProtKB:Q9BXM7}

Tissue Location

High levels expressed in testis, lower levels in brain, heart, lung, liver and kidney.

Mouse PINK Antibody (Center) Blocking peptide - Protocols

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

- [Blocking Peptides](#)

Mouse PINK Antibody (Center) Blocking peptide - Images

Mouse PINK Antibody (Center) Blocking peptide - Background

Protects against mitochondrial dysfunction during cellular stress, potentially by phosphorylating mitochondrial proteins (By similarity).

Mouse PINK Antibody (Center) Blocking peptide - References

Matsuda, N., et al. J. Cell Biol. 189(2):211-221(2010)Kawajiri, S., et al. FEBS Lett. 584(6):1073-1079(2010)Kim, K.H., et al. Neurosci. Lett. 468(3):272-276(2010)Morais, V.A., et al. EMBO Mol Med 1(2):99-111(2009)Chiba, M., et al. Cytogenet. Genome Res. 126(3):259-270(2009)