Human PINK1 Kinase

Cat. # UB402

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Background PINK1 (PTEN-induced putative kinase 1) is a serine/threonine kinase that accumulates at the surface of depolarized mitochondria in response to mitochondrial damage. PINK1 is the only kinase known to phosphorylate ubiquitin at Ser65, as well as the UBL (ubiquitin-like) domain of the E3 ubiquitin ligase Parkin (PARK2) at the same residue. This phosphorylation is essential for recruiting and fully activating Parkin on damaged mitochondria. Activated Parkin ubiquitinates multiple mitochondrial outer membrane proteins, while additional phosphorylation of mono- and polyubiquitin chains by PINK1 generates a dense phospho-ubiquitin signal that promotes mitophagy, the selective autophagic removal of damaged mitochondria. Recombinant human PINK1 efficiently phosphorylates recombinant Parkin and ubiquitin in vitro. Mutations in PINK1 cause a familial form of Parkinson's disease known as autosomal recessive juvenile Parkinson's disease (AR-JP).

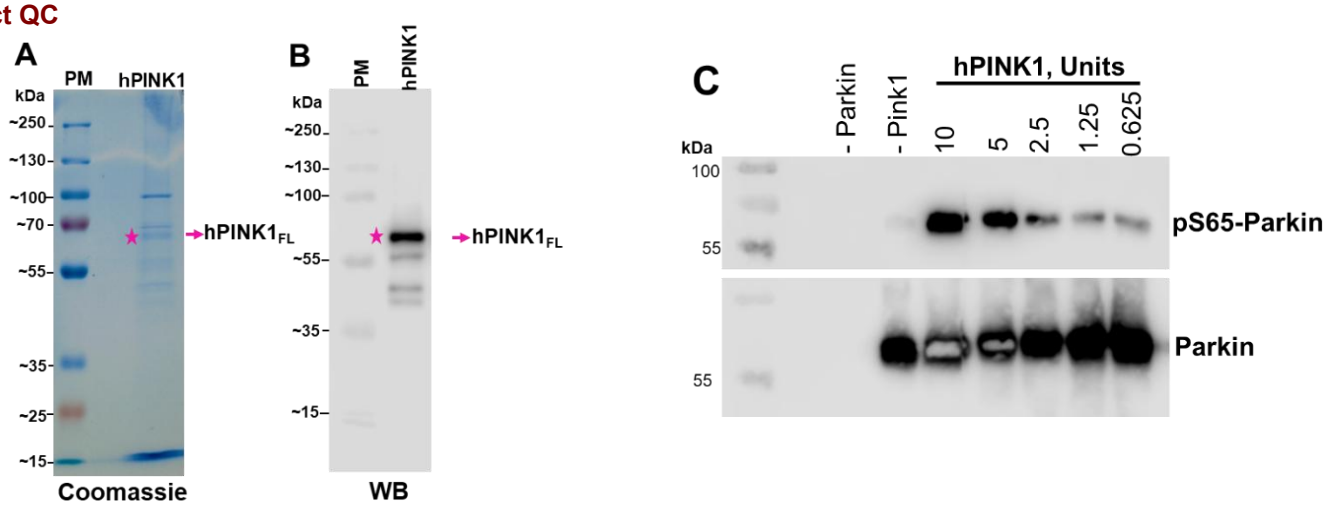
Alternate Names BRPK, PTEN Induced Putative Kinase 1, PARK6, Protein Kinase BRPK

Application(s) Studying ubiquitin phosphorylation, Parkin, and Parkinson's disease

Product Specifications

Tag	3xFlag
Purity	≥ 90% by SDS-PAGE
Molecular Weight	~65.8 and ~57.8 kDa
Quantity	25 µg
Species	Human
Expression System	*E. coli*
Physical State	Liquid
Buffer	50 mM Tris, pH 7.5, 0.15 M NaCl, 10% Glycerol, 0.25mM TCEP
Storage	-80°C. Avoid repeated freeze/thaw cycles

Product QC



A. A Coomassie stained gel of purified human PINK1. **B**. Western blot of purified hPINK1. **C.** Dose-dependent phosphorylation of Ser65 on Parkin by purified hPINK1. Parkin phosphorylation was detected using anti-pSer65-Parkin antibody (LifeSensors).

References

1. Ge, P., et al., *Molecular neurodegeneration*, 2020;*15*(1), 1-18.
2. Kumar, A., et al., *Elife*, 2017; *6*, e29985.
3. Quinn, P. M., et al., *Acta Neuropathologica Communications*, 2020; *8*(1), 1-20.