

Parkin (phosphorylated)

Cat. # UB317A

Background

Parkin, an E3 ubiquitin ligase encoded by the human PARK2 gene, is primarily localized in the cytosol. Upon mitochondrial damage, cytosolic Parkin is phosphorylated by the mitochondria-associated kinase PINK1, which activates Parkin's E3 ligase function. Once activated, Parkin ubiquitinates substrate proteins, targeting them for degradation via the ubiquitin-proteasome or lysosomal pathways. It plays a critical role in mitophagy, the selective autophagic removal of damaged mitochondria, and is a key player in maintaining mitochondrial quality control. While the full spectrum of Parkin's functions is still under investigation, mutations in PARK2 are known to cause autosomal recessive juvenile Parkinson's disease (AR-JP), a familial form of Parkinson's disease.

Alternate Names

PARK2, AR-JP, Parkinson Disease (Autosomal Recessive, Juvenile) 2, Parkin, E3 Ubiquitin-Protein Ligase Parkin, Parkin RBR E3 Ubiquitin-Protein Ligase, Parkinson Disease Protein 2, LPRS2.

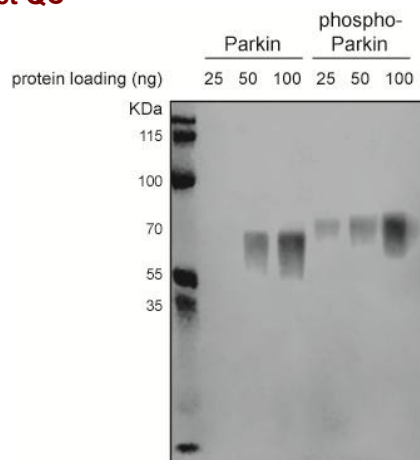
Application(s)

- SDS-PAGE
- TR-FRET assay
- Investigation of the Parkin and PINK1 mitophagy pathway
- Research and drug discovery applications

Product Specifications

Affinity Tag	His ₁₀ -SUMO
Purity	≥ 95% by SDS-PAGE
Molecular Weight	64 kDa
Quantity	25 µg
Species	Human
Expression System	<i>E. coli</i>
Physical State	Liquid
Buffer	50 mM Tris, 150 mM NaCl, 10 mM DTT, 10% glycerol
Solubility	> 3 mg/mL
Activity	A typical enzyme concentration of 5-100 nM is used for in vitro conjugation, depending on assay conditions
Stability & Storage	Over 1 year at -80°C. Avoid repeated freeze/thaw cycles

Product QC



SDS-Page Analysis of purified Parkin (phosphorylated): A short decreasing dose-response analysis was performed on an 8% SuperSep™ Phos-Tag™ pre-cast gels. Proteins were transferred to a PVDF membrane for Western blot analysis, using an anti-PRKN (PARK8) antibody. Phosphorylated Parkin migrated more slowly, appearing at a higher molecular weight on the Phos-Tag™ gel compared to unmodified WT FL-Parkin, confirming successful phosphorylation.

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References

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2. Wasner, K., et al., Mov Disord. 2022; 37(7):1405-1415.
3. Aguirre JD., et al., J Biol Chem. 2018;293(17):6337-6348.

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