

## **Supporting Information**

### **Parkin recruitment to impaired mitochondria for nonselective ubiquitylation is facilitated by MITOL**

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**Running title:** MITOL assists Parkin in mitochondrial localization

**Keywords:** Parkin, Parkinson's disease, mitophagy, ubiquitin, ubiquitin ligase

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Figure S1: The ubiquitylation and degradation pattern of Mt-MBP-HA and Mt-MBP-Ub-HA after CCCP and cycloheximide (CHX).

Figure S2: Endogenous MITOL was reduced in *MITOL*-knock down cells.

Figure S3: Statistical analysis of the subcellular localization of GFP-Parkin in HeLa cells stably expressing 3xFlag-MITOL WT or an E3-inactive C65S/C68S (CS) mutant following CCCP treatment.

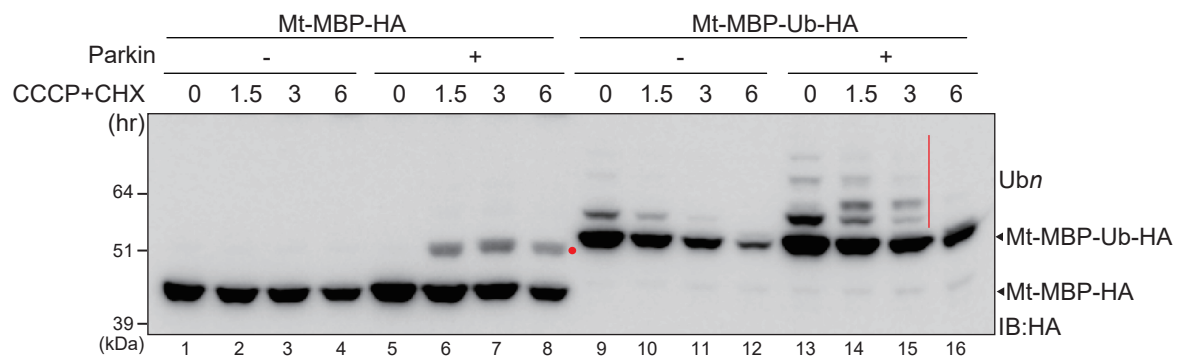


Figure S1.

Intact HeLa cells or HeLa cells stably expressing GFP-Parkin were transfected with Mt-MBP-HA or Mt-MBP-Ub-HA. They were then treated with 15  $\mu$ M CCCP + 50  $\mu$ g/ml cycloheximide (CHX) for the indicated times (hr), and then immunoblotted with an anti-HA antibody. The red dot and red bar indicate ubiquitylation of Mt-MBP-HA and Mt-MBP-Ub-HA, respectively.

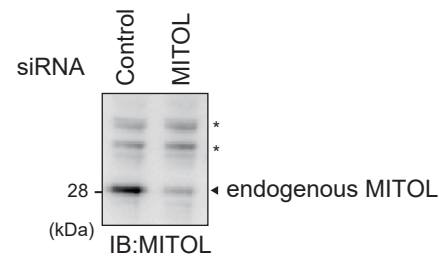


Figure S2.

HeLa cell lysates treated with control or *MITOL* siRNA were immunoblotted with an anti-*MITOL* antibody.

Endogenous *MITOL* was reduced in *MITOL*-knock down cells. The asterisks indicate cross-reacting bands.

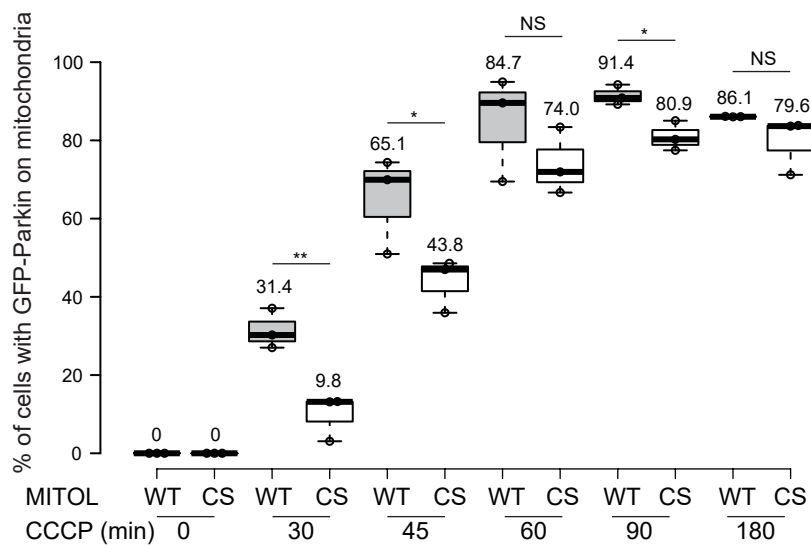


Figure S3.

Statistical analysis of the subcellular localization of GFP-Parkin in HeLa cells stably expressing 3xFlag-MITOL WT or an E3-inactive C65S/C68S (CS) mutant following 15  $\mu$ M CCCP treatment for the indicated times (min).

The percentages of cells with Parkin-positive mitochondria were calculated using > 100 cells.

Numbers in the box-and-whisker plot are mean values across three independent experiments.

Statistical significance was calculated using a one-tailed Welch's *t*-test. \*,  $P < 0.05$ ; \*\*,  $P < 0.01$ . NS, Not Significant.