

Supplementary figure legends

Fig.S1.

- A. Vector map of the DJ-1-expressing plasmid.
- B. Bcl-xL-GFP was co-expressed with Flag-Myc tagged DJ-1 WT, M3 or M5 in HEK293 cells. Cell extracts were subjected to immunoprecipitation (IP) with Flag M2 agarose beads. Note that both WT and mutant DJ-1 interact with Bcl-xL.
- C. Myc-tagged ATP synthase β subunit was co-transfected with full length or 120 amino acids N-terminal DJ-1. Cell extracts were subjected to immunoprecipitation of DJ-1, and western blot was performed with anti-Myc antibody or ATP synthase β subunit antibody. Full length DJ-1 or c-terminal deletion mutant DJ-1 both interact with ATP synthase β subunit.
- D. The ability of SMVs to sequester H^+ is improved by recombinant WT DJ-1 protein. Shown are ACMA fluorescence intensity changes in response to ATP in the presence of rat SMVs.

Fig.S2. Schematic of the ATP synthesis-NADH assay (see methods for details).

Fig.S3. TMRM staining of mouse hippocampal neurons; additional representative images are shown.

Fig.S4.

- A. Representative immunocytochemistry images of dopaminergic neurons obtained using anti-Tyrosine Hydroxylase Antibody.
- B. 10 μ M Dex increases the number of neurites arising from the soma of DJ-1^{-/-} TH⁺ neurons (right), but not the length of neurites (left).