Researchers halt progression of Parkinson's disease in mouse model

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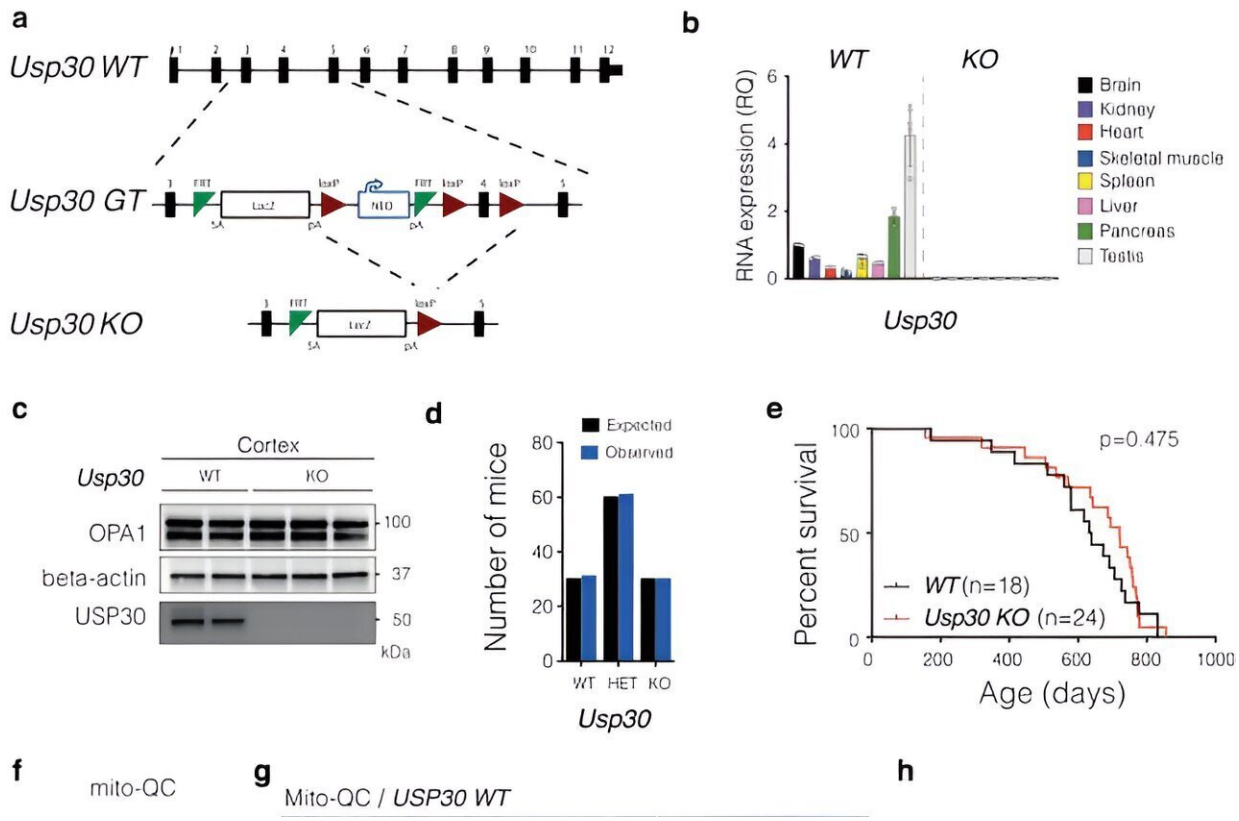

Generation and characterization of Usp30 KO mice. a Schematic of gene targeting to generate the Usp30 KO mice. b Bar graph shows the levels of Usp30 gene expression in different tissues in Usp30 WT and KO mice (n = 5 for brain, n = 4 for testis, n = 3 for all other tissues). Error bars represent mean ± s.d. c Representative Western Blot images of OPA1, beta-actin and USP30 in the cortex of Usp30 WT and KO male mice. The experiment was repeated twice independently. d Estimated and observed numbers of WT, Usp30 heterozygous (Het) and Usp30 homozygous knockout (KO) mice in the offspring of

heterozygous Usp30 breeders. e Survival curve of WT and Usp30 KO mice. f schematic image showing the working mechanism of mito-QC reporter protein for assessing the mitophagy signal in cells. g Representative fluorescence images show the mito-QC fluorescence signal (mCherry-red, GFP-green), and dopaminergic neurons (TH, blue) in the SNpc of mito-QC and mito-QC/Usp30 KO male mice. Dashed white inlets were enlarged in right panels showing the details of mCherry only puncta (mitophagy puncta) in the DA neurons. Scale bar, 10 µm. h Quantification of mitophagy puncta in individual dopaminergic neurons of the SNpc (n = 13 for USP WT male mice, n = 14 for Usp30 KO male mice, 5–10 neurons per mouse). WT and Usp30 KO in the bar graph represent mito-QC and mito-QC/Usp30 KO, respectively. Significance determined by unpaired, two-tailed Student's t test. Error bars represent mean ± s.d.; *P