Molecular signature names	Foxo3a-/-Fancd2-/- VS Foxo3a-/-Fancd2+/+			Foxo3a-/-Fancd2-/- VS Foxo3a+/+Fancd2-/-		
Neurological disorder	No.	P-Value	Q-Value	No.	P-Value	Q-Value
HUNTINGTONS_DISEASE	N/A	N/A	N/A	4	1.18E-04	1.42E-02
ALZHEIMERS_DISEASE_UP	18	6.95E-06	3.52E-03	25	3.9E-12	1.15E-09
Aging						
AGING_UP (REF 39)	N/A	N/A	N/A	N/A	N/A	N/A
AGING_NEOCORTEX_UP (REF 40)	4	1.25E-04	2.05E-02	6	6.98E-06	1.87E-03
Mitochondrial function						
MITOCHONDRIA (REF 32)	4	1.12E-04	1.93E-02	12	8.62E-13	3.16E-08
MITOCHONDRION_ORGANIZATION_AND_B IOGENEENESIS	N/A	N/A	N/A	10	5.59E-07	2.74E-04
Oxidative phosphorylation						
VOXPHOS (REF 32)	N/A	N/A	N/A	11	4.04E-07	1.96E-04
OXIDATIVE_PHOSPHORYLATION	N/A	N/A	N/A	7	5.3E-06	1.29E-03
Stem cell						
NEURAL_CREST_STEM_CELL	5	1.05E-04	1.88E-02	N/A	N/A	N/A
ADULT_TISSUE_STEM_MODULE (REF 33)	N/A	N/A	N/A	76	0.00E+00	0.00E+00
MAMMARY_STEM_CELL_DN (REF 34)	19	1.28E-09	3.94E-07	N/A	N/A	N/A
EMBRYONIC_STEM_CELL_CORE	N/A	N/A	N/A	6	6.26E-06	1.69E-03

SUPPLEMENTARY FIG. S2. Deregulated expression of genes in ROS metabolism, mitochondrial function, stem cell proliferation, and neurogenesis in DKO brains. Whole-genome microarray data were obtained from 2-month-old WT, SKO, and DKO brain tissues. Molecular signatures enriched for genes up-regulated and down-regulated in DKO brain tissue compared with  $Foxo3a^{-/-}$  SKO or  $Fancd2^{-/-}$  SKO as provided by GSEA. ROS, reactive oxygen species.