Supplemental Figures

S1) Phenotype of mutant *dynactin p150^{Glued}* mice

(A-D) Behavior of mice was documented throughout disease progression. Unlike their non-transgenic counterparts (A) mutant mice do not splay their hindlimbs when suspended by their tail (B). Eventually the hindlimbs of the mutant mice become completely paralysed, they display poor grooming and lose weight (D) compared to the non-transgenic mice (C).

S2) Additional pathological changes in mutant *dynactin p150^{Glued}* mice

(A-B) Accumulation of other members of the dynactin complex is observed in the inclusions seen in mutant p150^{Glued} mice, shown is Arp1 staining in nontransgenic (A) and mutant p150^{Glued} mice (B). (C-D) GFAP stained sections from lumbar region of spinal cord from non-transgenic (C) and mutant p150^{Glued} mice (D) reveal astrocytic gliosis in the mutant mice.

S3) Accumulation of neurofilaments in axons of mutant *dynactin p150^{Glued}* mice

(A) Electron microscopic (EM) analysis shows massive accumulation of neurofilaments in proximal axons of mutant p150^{Glued} mice.