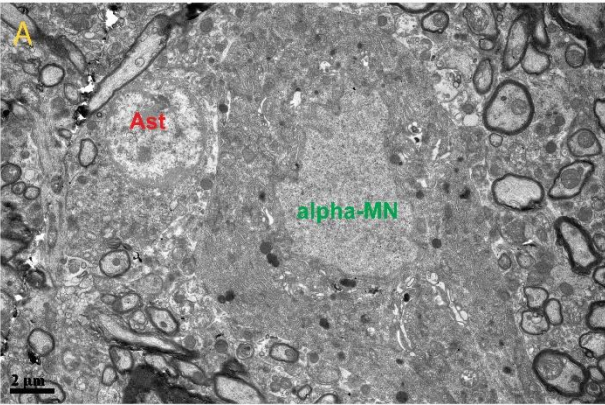
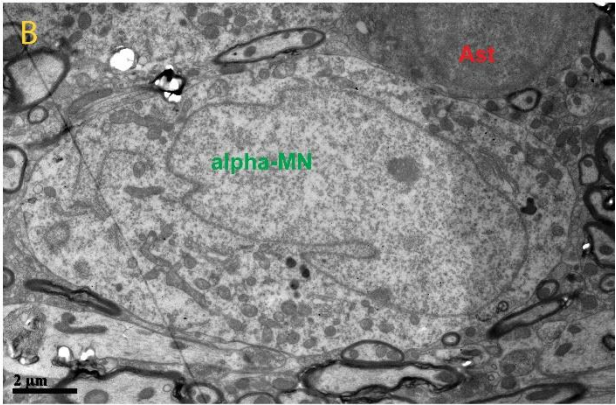


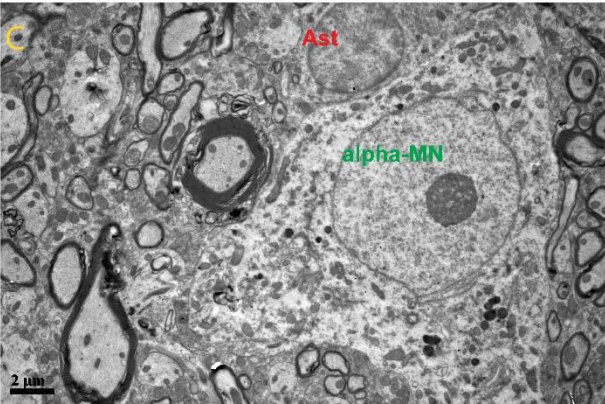
Contralateral side control



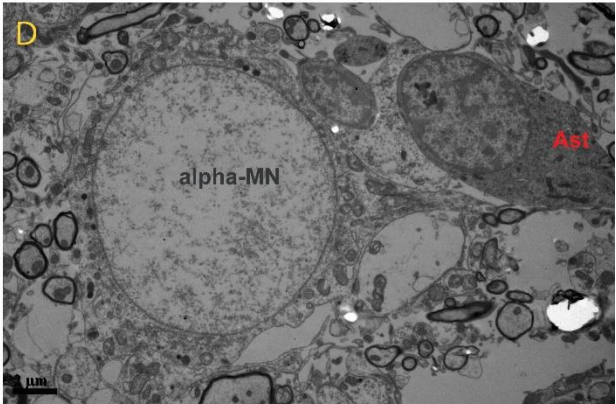
7-NI treatment



SP600125 treatment



Vehicle treatment



**Figure S1.** The range of motor neuro-astrocyte interaction in different groups. There was normal  $\alpha$ -motor neuron-astrocyte interaction in the 7-nitroindazole and Sp600125 treated rats. Degenerative  $\alpha$ -motor neurons of vehicle treated rats were frequently found to be associated with astrocytes exhibiting phagocytosis (alpha motor neuron-alpha-MN, Ast-astrocyte). Scale bar = 2 $\mu$ m.

X3800.

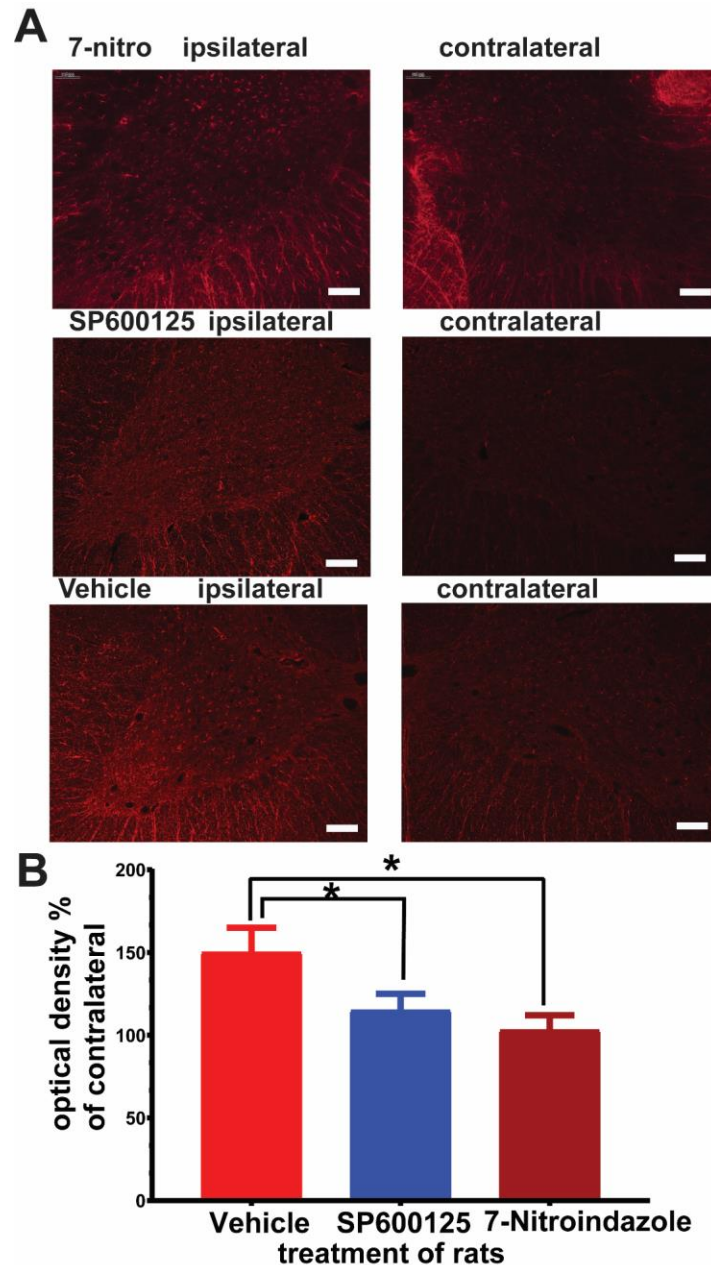
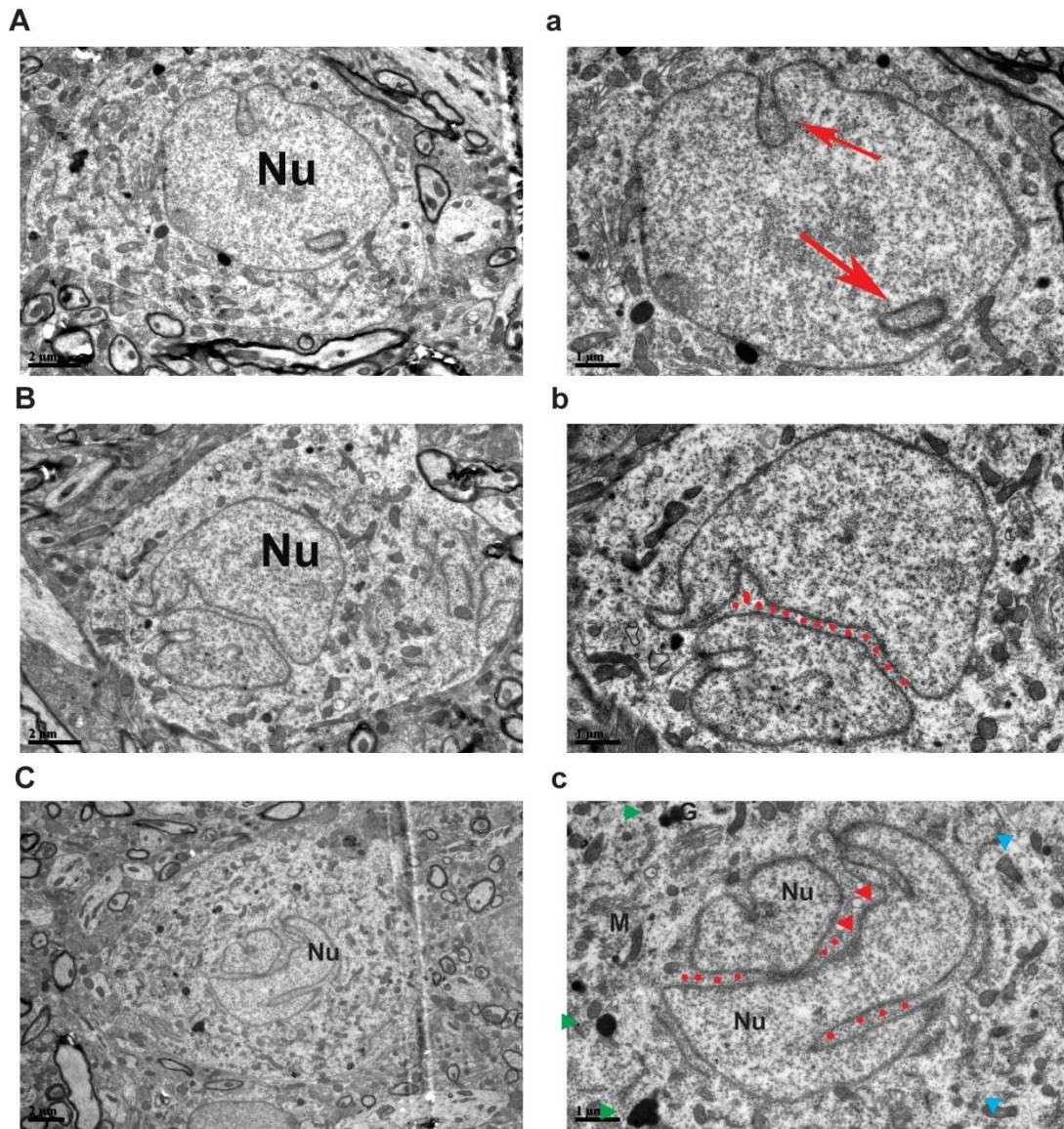


Figure S2 A: 4 Immunofluorescence staining to detect the expression of glial fibrillary acidic protein (GFAP) positive astrocytes (red) at 6 months after avulsion. B: optical density expressed as a percentage of the contralateral side. Vehicle treated rats exhibited residual astrocytic activation at 6 months after avulsion. Scale bar = 100 $\mu$ m. Mean $\pm$ SD, \* denotes  $P < 0.05$  Anova with Tukey post hoc test.





**Figure S3.** Peculiar nuclei morphologies of the 7-nitroindazole treated rats. There was a continuum of reticularization of the nucleus (spaces indicated by red dots) in the 7-nitroindazole treated rats. A is showing the mildest form (enlarged in a, red arrow show membrane-bound vesicle inside the nucleus) while C (enlarged c) depicts the highly reticularized nucleus of the representative  $\alpha$ -motor neuron. Scale bar = 1  $\mu$ m and 2  $\mu$ m. Nu- nucleus; blue arrowhead- mitochondrion (M); G-Golgi apparatus; red arrowheads-cleft between nucleus masses containing vacuoles. X3800, X5800.