

**Supplementary Figure 1.** AAV titer and purity measurement. **A**, Workflow of AAV production and purification followed by K-NSCs infection. **B**, Titer of AAV serotypes. **C**, Western analysis of purified AAV with an antibody against C-terminal of the Cap protein.



**Supplementary Figure 2.** K-NSCs transduction by AAV at different MOIs. A, Immunostaining results shown that GFP expression level was positively correlated with the MOI used. Scale bar,100um. B, Mean fluorescence density of GFP in K-NSCs infected by AAV at different MOIs. \**P* < 0.05, \*\**P* < 0.01, and \*\*\**P* < 0.001.