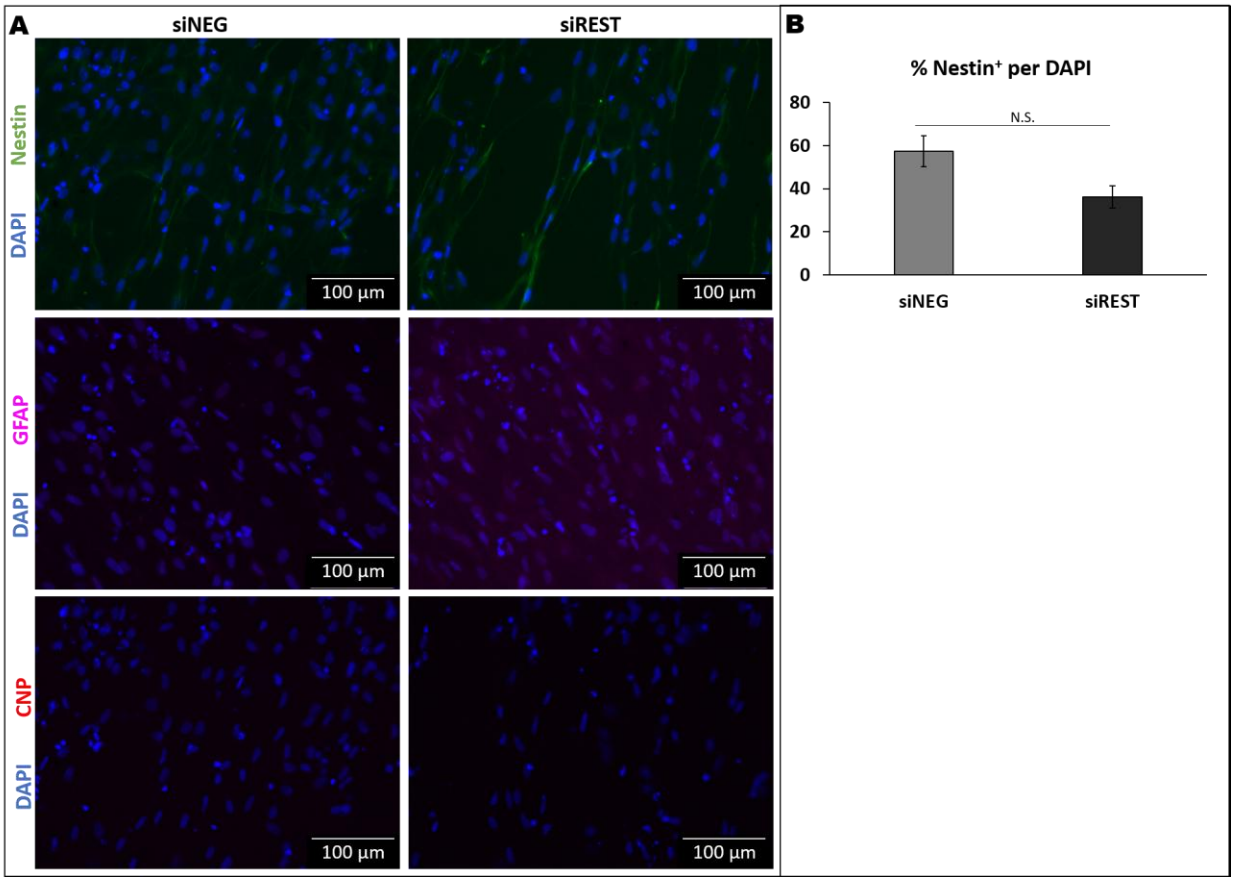
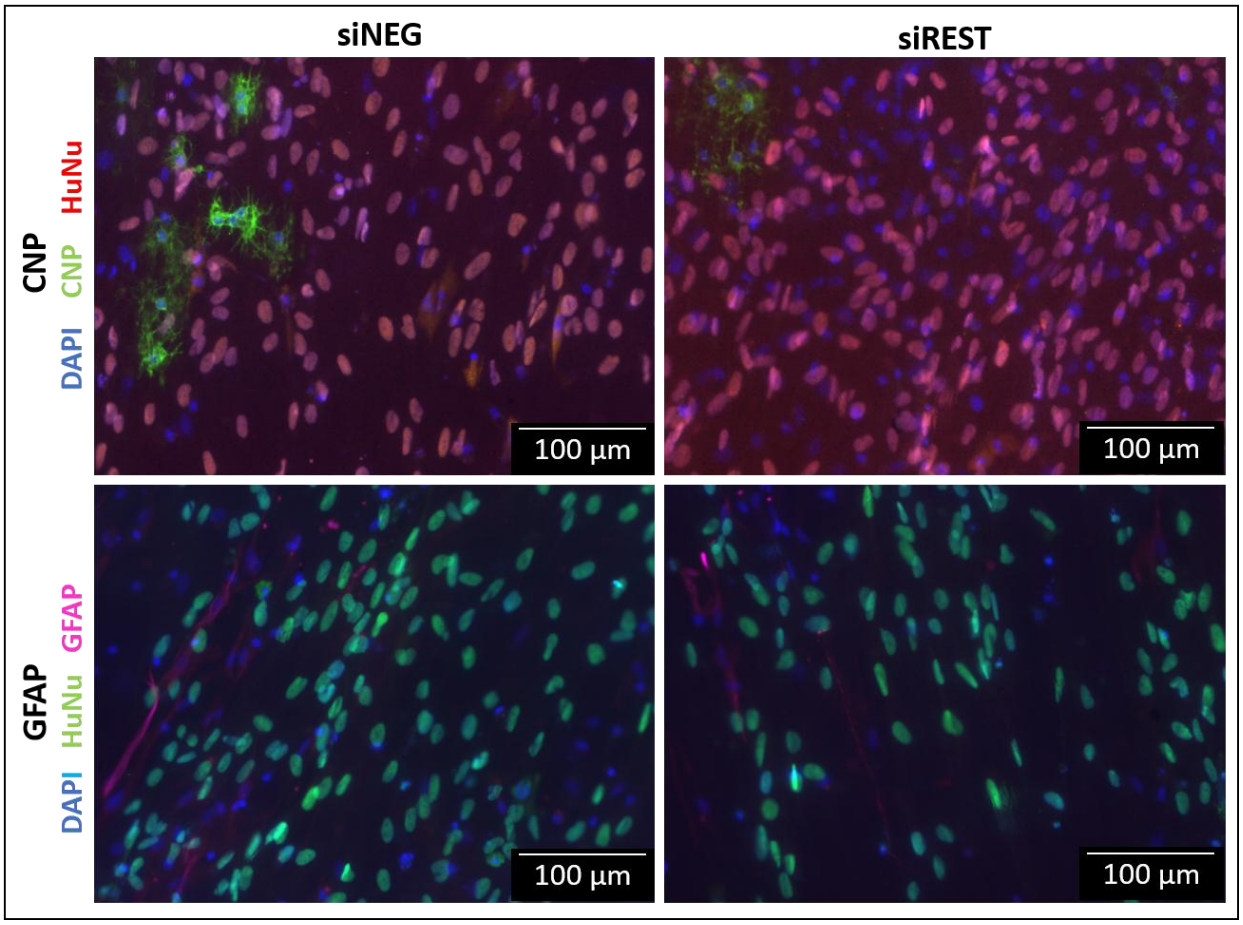
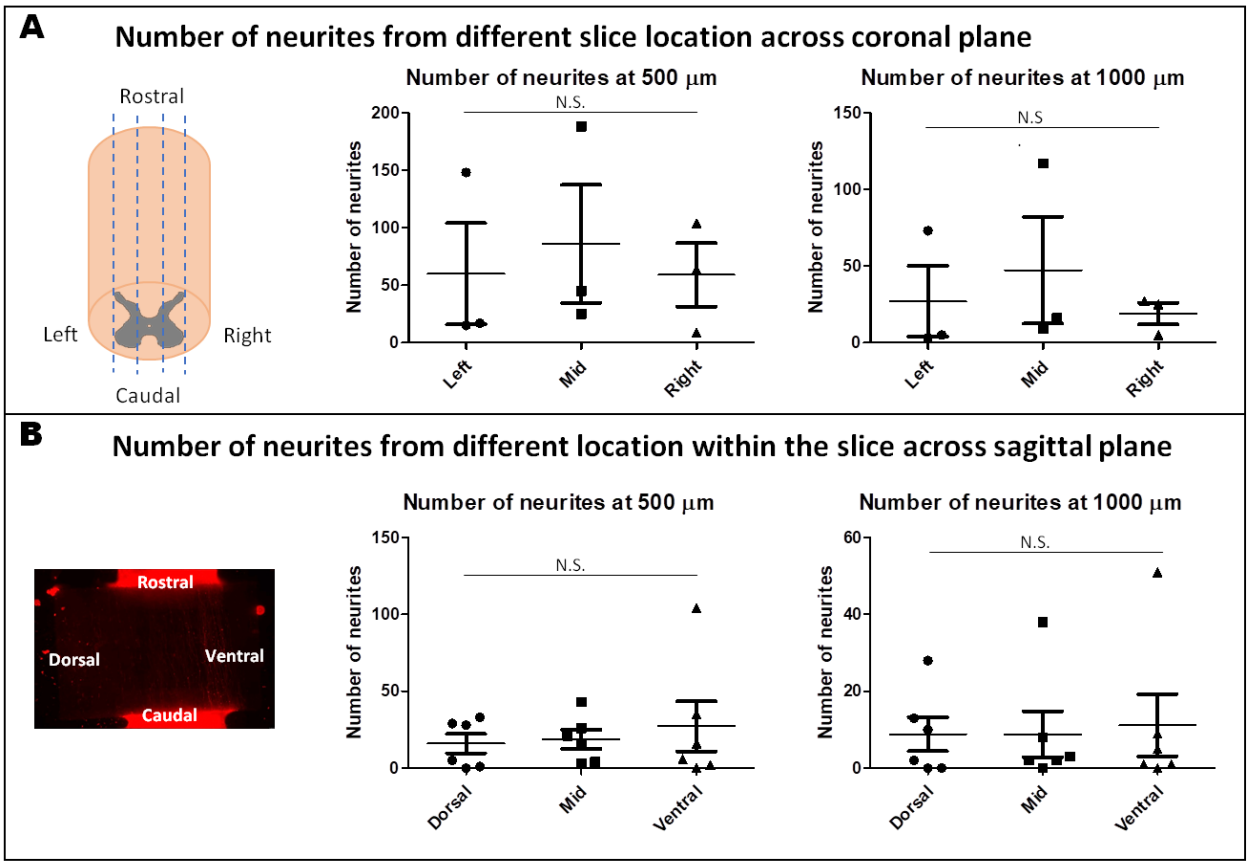


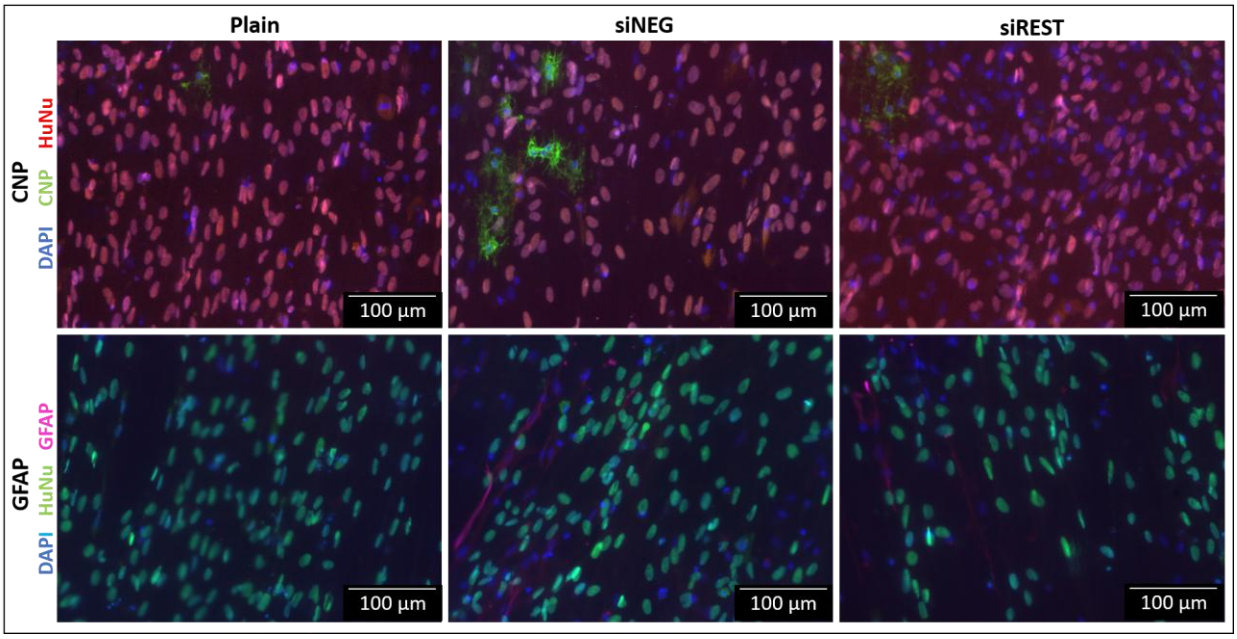
Supplementary Figure 1. (A) Representative images with Nestin, GFAP and CNP staining at Day 9 after seeding on DOPAMINE – RNAiMAX scaffolds. There were no $GFAP^+$ and CNP^+ cells on the scaffolds. (B) Percentage of $Nestin^+$ cells; mean ± S.E.; n = 3.



Supplementary Figure 2. Representative images of $HuNu^+$ hiPSC-NPCs in the middle of the scaffold stained for CNP and GFAP. There were no $HuNu^+CNP^+$ and $HuNu^+GFAP^+$ double positive cells.



Supplementary Figure 3. (A) Number of neurites from different slice locations across the coronal plane. Slices were labelled as left to right according to location in the spinal cord. Number of neurites were counted at 500 µm and 1000 µm from the interface; mean± S.E.; n = 3. (B) Number of neurites from different locations within the slice across sagittal plane. The locations within the slices were categorized into three regions: dorsal, mid and ventral. Number of neurites were counted at 500 µm and 1000 µm from the interface; mean± S.E.; n = 6.



Supplementary Figure 4. Representative images with TUJ1 staining (red) and nuclei counterstained by DAPI (blue) at Day 9 after seeding. siRNA-TKO complexes were added via bolus transfection into the medium of hiPSC-NPCs seeded on DOPA- coated scaffolds. The final concentration was 50 nM siRNA with 0.5 µl TKO.