Figure and Table Captions

Fig. S1. Fabrication of spheroids of GFP, Sox2-GFP, or Olig2-GFP transfected astrocytes by an agarose hydrogel microwell. Cell seeding density was kept at 2×10^6 cells/mL. Scale bar = 200 μm.

Fig. S2. GFP expressing in astrocyte spheroids after direct transfection of pre-formed spheroids with PBAE 536 at the polymer/DNA ratio of 60 w/w and varied DNA doses of 1, 3, 4.5, 6, and 9 μg/10^6 cells at days 2, 4, and 7. Scale bar = 200 μm.

Fig. S3. GFP expressing in astrocyte spheroids after concurrent transfection of single cells with PBAE 536 at the polymer/DNA ratio of 60 w/w and varied DNA doses of 1, 3, 4.5, 6, and 9 μg/10^6 cells at days 2, 7, and 14. Scale bar = 200 μm.

Fig. S4. Immunostaining of astrocytes at day 2 after transfection with PBAE 536 nanoparticles containing plasmid encoding Sox2-GFP. Cells were stained with Sox2 (red), Olig1 (red), PDGFRα (red), O4 (red), and MAP2 (red), respectively. Cell nuclei were stained with blue by DAPI. Scale bar = 200 μm.

Fig. S5. Immunostaining of astrocytes at day 4 after transfection with PBAE 536 nanoparticles containing plasmid encoding Sox2-GFP. Cells were stained with Sox2 (red), Olig1 (red), PDGFRα (red), O4 (red), A2B5 (red), and MAP2 (red), respectively. Cell nuclei were stained with blue by DAPI. Scale bar = 200 μm.

Fig. S6. Immunostaining of astrocytes at day 4 after transfection with PBAE 536 nanoparticles containing plasmid encoding Olig2-GFP. Cells were stained with nestin (red), PDGFRα (red), Tuj1 (red), and MAP2 (red), respectively. Cell nuclei were stained with blue by DAPI. Scale bar = 200 μm.

Table S1. Primers used in this study.

Table S2. Primary antibodies used in this study.

Table S3. Number average (Mn) and molecular weight (Mw) measurements with gel permeation chromatography (GPC), and average degrees of polymerization (DP) of the PBAE polymers used in this study.

Table S4. N/P ratios and weight ratios of all PBAE polymer/DNA used in this study.