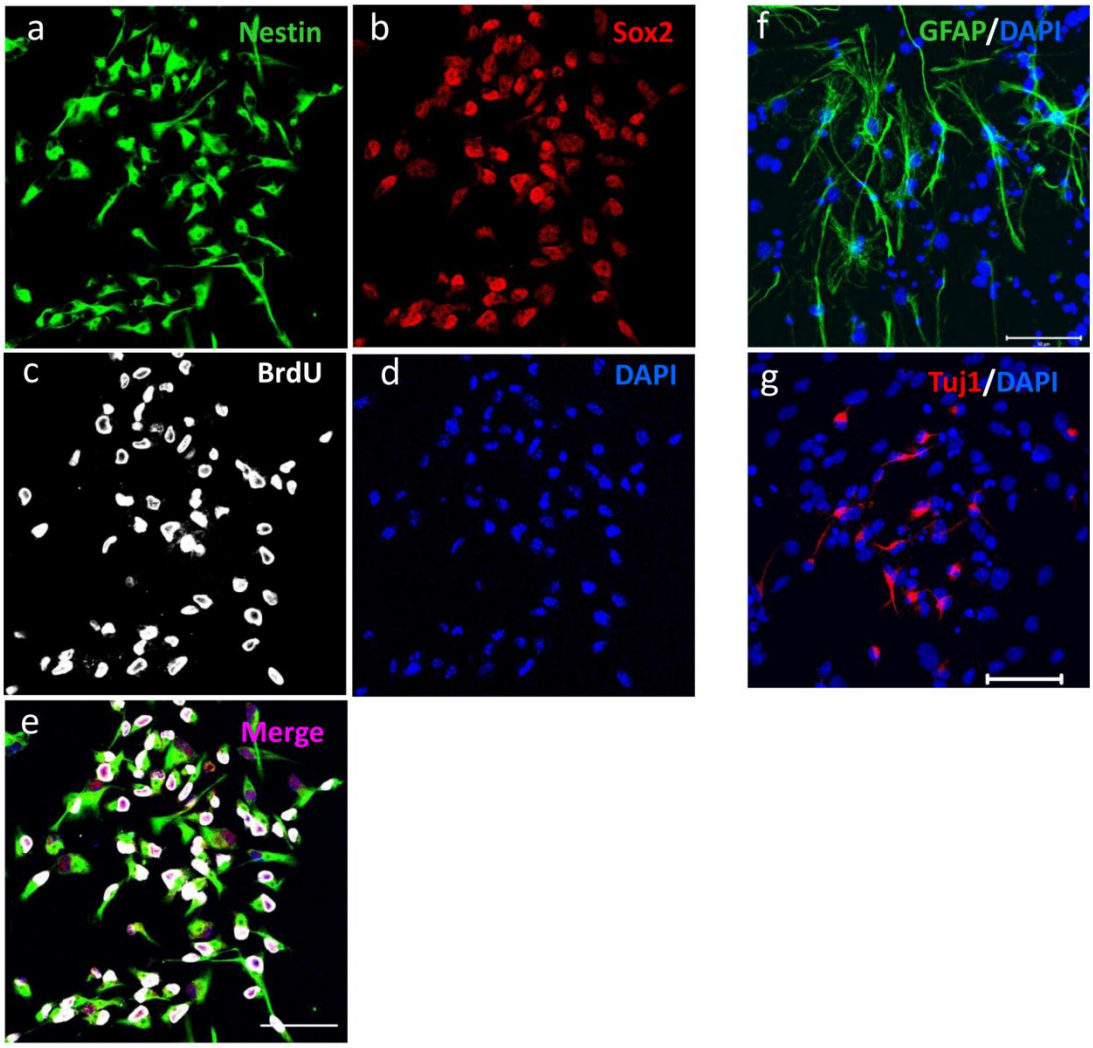


**Figure S1** DG NSCs isolated using this protocol exhibit basic neural stem cell properties *in vitro*. (a-d) Passage 8 DG neurospheres were dissociated to single cells and placed onto a poly-L-ornithine- and laminin-coated coverslip in N2 medium containing FGF2 and EGF (see protocol. At 18 hours post-plating, bromodeoxyuridine (BrdU) was added to the cells for 16 hours, followed by fixation using 4% parafaldehyde and subjected to histological analysis. The majority of DG NSCs expressed both neural stem cell markers Nestin (a, green) and Sox2 (b, red) and incorporated BrdU (c, white) and nuclear staining (d, blue). e, The merged view of a, b, c ,and d. (f, g) Passage 8 DG neurospheres were dissociated to single cells and placed onto a poly-L-ornithine- and laminin-coated coverslip in cell proliferation medium (see protocol. At 18 hours post-plating, medium was changed into differentiation medium (see protocol) and differentiated for 4 days. Cells were then fixed using 4% paraldehyde and subjected to histological analysis. DG NSCs differentiated into neurons and astrocytes as demonstrated by immunostaining cells using the astrocytic marker GFAP (f, green) and the neuronal marker Tuj1 (g, red). Scale bars = 50 μm. The detailed methods can be found in our published papers[9,14-16]. Primary antibodies used here are: Rat anti BrdU (1:1000, Abcam, ab6326); Chicken anti Nestin (1:1000, Aves Lab, #mNES); Mouse anti Sox2 (MAB4343, 1:1000, Millipore); Rabbit anti GFAP (1:1000, Dako, Z0334); Mouse anti Tuj1 (1:1000, Progega, G712A). Secondary antibodies used here are: Goat anti Chicken 488 (1:500, Invitrogen, A11039); Goat anti Rat 568 (1:500, Invitrogen, A11077); Goat anti Mouse 647 (1:500, Invitrogen, A21235); Goat anti Rabbit 488 (1:500, Invitrogen, A11008); Goat anti Mouse 568 (1:500, Invitrogen, A11004).