

**Figure S1. Intracortically grafted forebrain-fate NPCs differentiated and received synaptic inputs from host neurons (related to Figures 1, 2 and 3)**

- A. qRT-PCR analysis of *OCT4*, *NANOG*, *EN1*, *GBX2* and *HOBX2* in H1 hESCs and induced NPCs derived from H1-CAG-GTRgp cells (related to Figure 1).
- B. Representative immunohistochemical staining of GAD67, TH and CHAT in brain slices at 6 mpt (related to Figure 2).
- C. Representative images of mCherry fluorescence in H1 hESCs and H1-CAG-GTRgp hESCs infected with EnvA-pseudotyped rabies viruses (related to Figure 3).

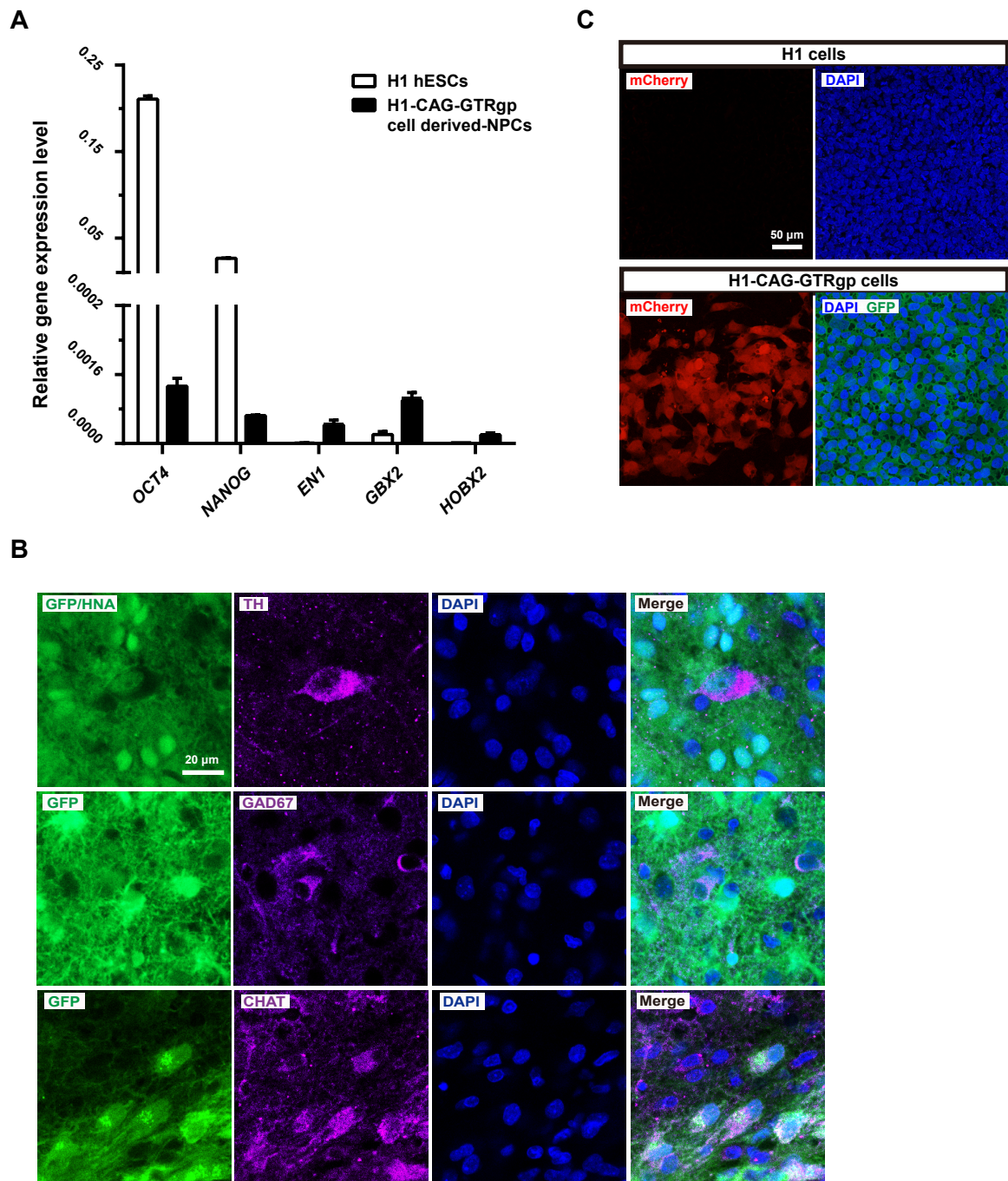


Figure S1

**Table S1. Primers used in this study**

<b>sgRNA and primers for gene targeting</b>		
	<b>Sequence (5'→3')</b>	
sgRNA	AGGGCCGGTTAATGTGGCTC	
	<b>Forward primers (5'→3')</b>	<b>Reward primers (5'→3')</b>
5'arm	ACCCTATGCTGACACCCCGT	GGGGTGGAGGGGACAGATAAAAAG
3'arm	CCACTAGGGACAGGATTGGTGACA	CTTGGGAAGTGTAAGGAAGCTGCAG
Primer-F/R	ATGGTGAGCAAGGGCGAGGAGCTGTT	CTAGCCACTAAGGCAATTGGGGTG
<b>qRT-PCR primers</b>		
<b>Gene</b>	<b>Forward primers (5'→3')</b>	<b>Reward primers (5'→3')</b>
<i>GAPDH</i>	TCCAAAATCAAGTGGGGCGAT	TTCTAGACGGCAGGTCAGGTC
<i>OCT4</i>	CCTCACTTCACTGCACTGTA	CAGGTTTTCTTTCCCTAGCT
<i>SOX2</i>	GCCGAGTGGAACTTTTGTCG	GGCAGCGTGTACTTATCCTTCT
<i>NANOG</i>	TGAACCTCAGCTACAAACAG	TGGTGGTAGGAAGAGTAAAG
<i>NKX2.1</i>	CGCATCCAATCTCAAGGAAT	CAGAGTGTGCCCAGAGTGAA
<i>PAX6</i>	TGGGCAGGTATTACGAGACTG	ACTCCCGCTTATACTGGGCTA
<i>OTX2</i>	CAAAGTGAGACCTGCCAAAAGA	TGGACAAGGGATCTGACAGTG
<i>FOXP1</i>	GAGCGACGACGTGTCATC	GCCGTTGTAACTCAAAGTGCTG
<i>COUP-TF1</i>	TTCAAGAGGAGCGTCCGCA	TTGGAGGCATTCTTCCTCGC
<i>EMX1</i>	AGCGCGCTTTACCATAGAG	CAGGGAAGCCACTCACGAAG
<i>EMX2</i>	CGGCACTCAGCTACGCTAAC	CAAGTCCGGGTTGGAGTAGAC
<i>SP8</i>	CTTGGTGGGGGTGACTTTT	TGCAGCGATTGACAAGA
<i>EN1</i>	GAGCGCAGGGCACCAATA	CGAGTCAGTTTTGACCACGG
<i>GBX2</i>	CCGCCTTCAGCATAGACTCG	GGTAGCCGGTGTAGACGAAAT
<i>HOBX2</i>	CGCCAGGATTCACCTTTCCTT	CCCTGTAGGCTAGGGGAGAG
<b>DNA sequencing primers</b>		
<b>Primers</b>	<b>Sequences (5'→3')</b>	
Rgp -F1	AAGTGCTCAGGAGTAGCGGT	
Rgp-F2	GGCAGACCCGCTACCGTT	
TVA-F	TGCTGATCACTGCAGTGCTCC	
WPRE-F	ACCACCTGTCAGCTCCTTTCC	
PGK-R	GCTAAAGCGCATGCTCCAGACTG	