

SUPPLEMENTARY INFORMATION

Supplementary figures

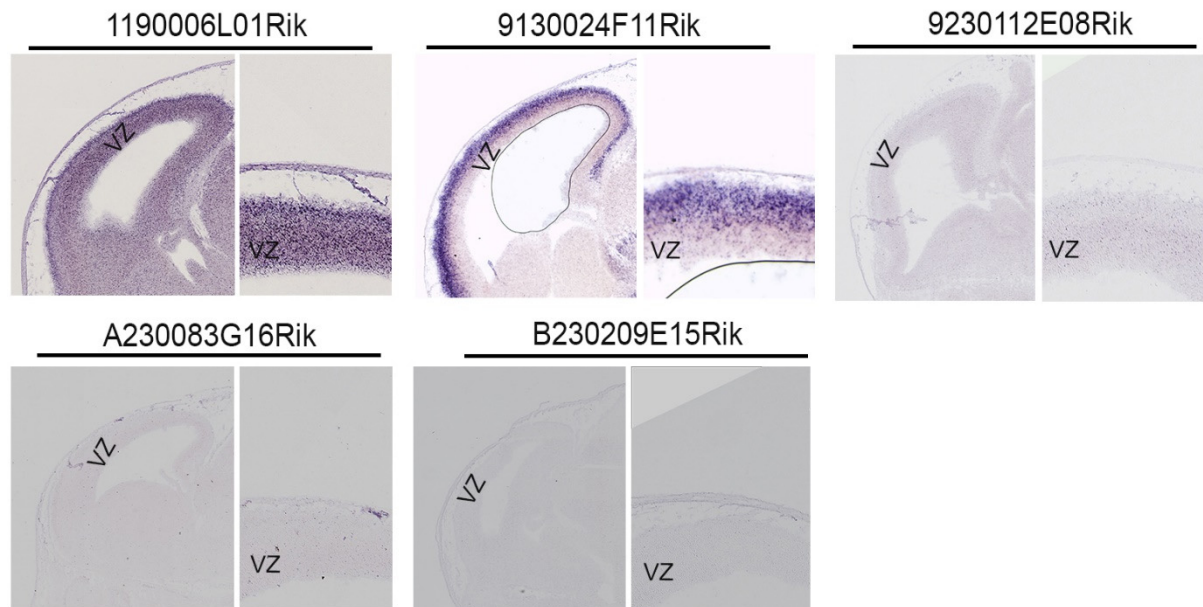


Figure S1: Expressions of ncRNAs within and outside the ventricular zone of the developing mouse cortex.

Micrographs obtained from GenePaint showing *in situ* hybridization of selected ncRNAs in the developing mouse cortex and indicate that whereas some ncRNAs are expressed in the ventricular zone, others are predominantly expressed in the (presumptive) cortical plate.

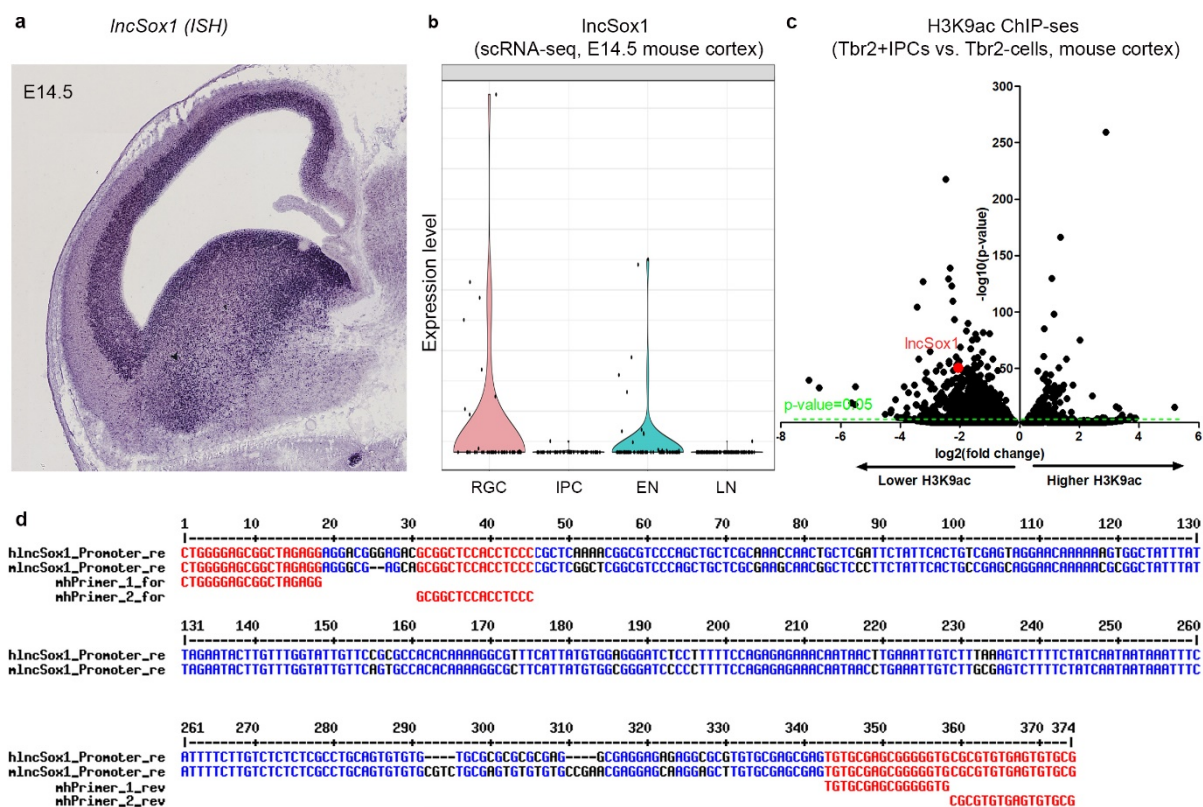


Figure S2: Expression of *IncSox1* in mouse cortex is mainly found in non-IPCs and associated with low promoter levels of H3K9ac.

(a) Micrograph showing *in situ* hybridization (ISH) of *IncSox1* in the E14.5 mouse cortex with overt signal intensity in the ventricular zone. (b) Image showing single cell RNA sequencing analysis of *IncSox1* expression profile in the E14.5 mouse cortical cells. (c) Volcano plots showing H3K9ac distribution profile of IPC and non-IPC genes following ChIP/qPCR sequencing analysis. The *IncSox1* gene is highlighted in red. (d) DNA sequence alignment for two ortholog regions of mouse (m) and human (h) *IncSox1* promoter and primers, which were used in ChIP/qPCR experiment (see also Fig. 3E). Note that mhPrimer_1 set was used to amplify the region 1 of both mouse and human *IncSox1* promoter. The mPrimer_2 and hPrimer_2 sets, which have similar sequence, were used to amplify the region 2. Abbreviations: RGC, radial glial cell; IPC, intermediate progenitor cell; EN, early-born neuron; LN, late-born neuron.

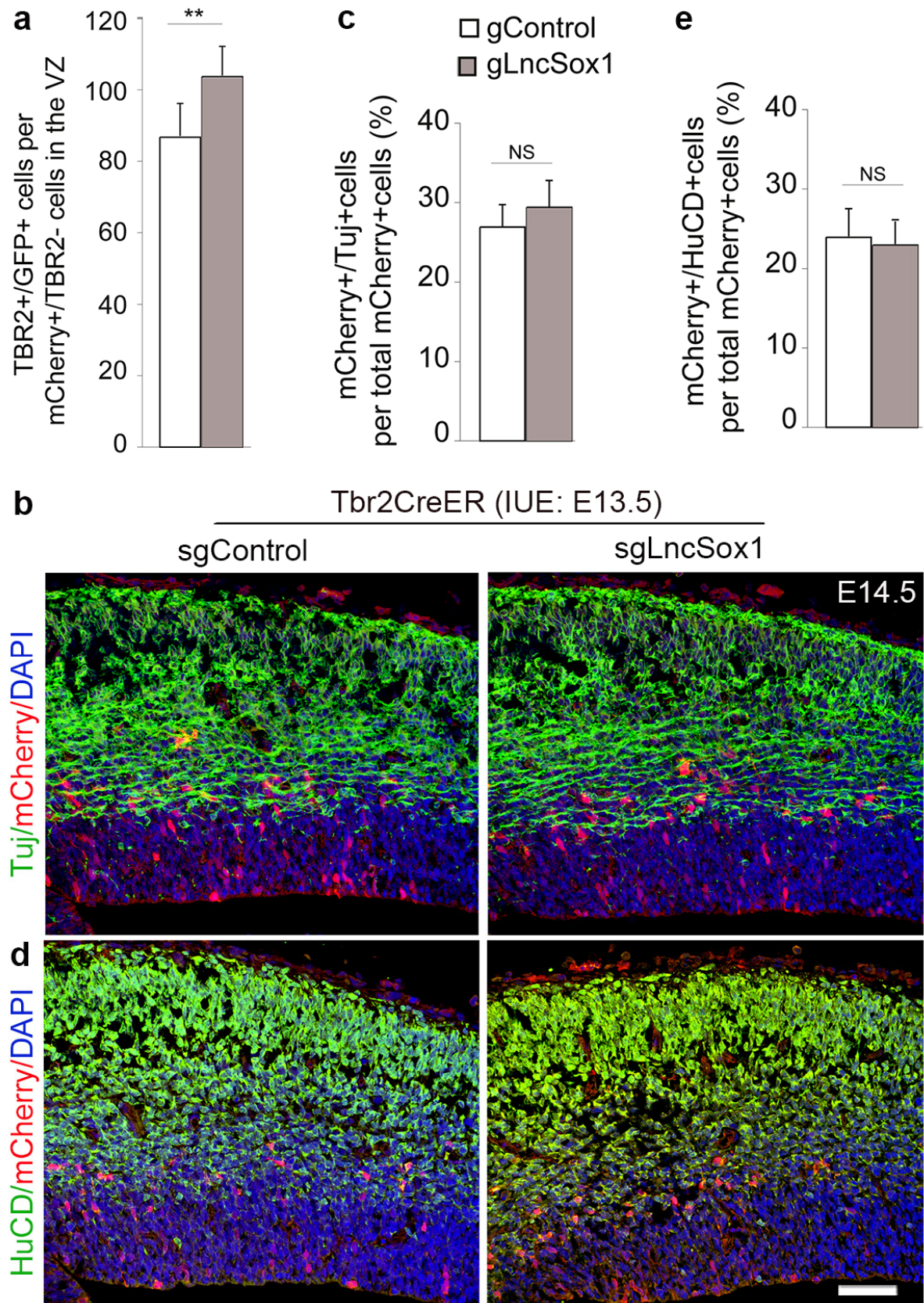


Figure S3: H3K9ac-mediated increase in *IncSox1* expression promotes generation of IPCs without altering early-stage neurogenesis.

(a, b) Bar graphs (a) and immunomicrographs (b) showing significant increase in Tbr2 expressing cells following treatment of the E14.5 mouse cortex with sgLncSox1 compared to control. (c-e) Bar graphs (c, e) and immunomicrographs (d) showing no significant difference in the number of early-born neurons following treatment of the E14.5 mouse cortex with sgLncSox1 compared to control. Values are presented as means $\pm$ SEMs (** $p < 0.001$, NS: not significant). Scale bar = 50 μ m.

Supplemental data files

- **Table S1:** Differential binding of H3K9ac at ncRNA promoters between TBR2+ IPCs in TSA- and vehicle-treated embryonic cortex (as spreadsheet).
- **Table S2:** Differential ncRNA gene expression between TBR2+ IPCs in TSA- and vehicle-treated embryonic cortex (as spreadsheet).
- **Table S3:** Differential binding of H3K9ac at ncRNA promoters between TBR2- cells in TSA- and vehicle-treated embryonic cortex (as spreadsheet).
- **Table S4:** Differential ncRNA gene expression between TBR2- cells in TSA- and vehicle-treated embryonic cortex (as spreadsheet).
- **Table S5:** Statistical analyses (as spreadsheet).
- **Table S6:** List of primers for qPCR and ChIP-qPCR (as spreadsheet).