**Supplemental Table 2. Abbreviations in Text**

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| ADH | Anti-diuretic hormone |
| Apaf1 | Apoptotic protease activating factor 1 |
| Aqp4 | Aquaporin-4 |
| CA1-3 | Cornua ammonis 1-3 |
| CC3 | Cleaved caspase 3 |
| Celsr1 | Cadherin, EGF LAG Seven-Pass G-type receptor 1 |
| CN | Cranial nerve |
| CNS | Central nervous system |
| Crc | Circletail |
| CV | Cresyl violet |
| Dpc | Days post-conception |
| DRG | Dorsal root ganglion |
| Dvl-1 and Dvl-2 | Disheveled 1 and 2 |
| E | Embryonic day |
| EGL | External granular cell layer |
| EMT | Epithelial-to-mesenchymal transition |
| Fgfr3 | Fibroblast growth factor receptor-3 |
| GABA | γ-aminobutyric acid |
| GC | Granule cell neuron |
| GEM | Genetically engineered mice |
| GFAP | Glial fibrillary acidic protein |
| Glast | Glutamate and aspartate transporter |
| Glul | Glutamate-ammonia ligase (glutamate synthetase) |
| Grik4 | Glutamate receptor, ionotropic, kainate 4 (KA1) |
| H&E | Hematoxylin and eosin |
| HPE | Holoprosencephaly |
| HRP | Horseradish peroxidase |
| Iba-1 | Ionized calcium-binding adaptor molecule 1 |
| IHC | Immunohistochemistry |
| Lp | Loop-tail |
| Lpp1 | Lipid phosphate phosphohydrolase type 1 (Ltap, Vangl2) |
| MBP | Myeline basic protein |
| MET | Mesenchymal-to-epithelial transition |
| MHC | Major histocompatibility complex |
| NBF | Neutral buffered 10% formalin |
| NTD | Neural tube defect |
| Olig1 and Olig2 | Oligodendrocyte transcription factors 1 and 2 |
| OPC | Oligodendrocyte precursor cell |
| P | Postnatal day |
| PBS | Phosphate-buffered saline |
| Pdgf-rα | Platelet-derived growth factor receptor alpha |
| PFA | Paraformaldehyde |
| Pou3f1 | POU class 3 homeobox 1 (SCIP) |
| RT | Room temperature |
| Shh | Sonic hedgehog |
| Sox10 | Sex-determining region-box 10 |
| SRY | Sex-determining region Y |
| SVZ | Subventricular zone |
| TEM | Transmission electron microscopy |
| TS | Theiler stage |
| TUNEL | Terminal deoxynucleotidyl transferase dUTP nick end labeling |
| VZ | Ventricular zone |