

Supplementary Information Guide

Supplementary Methods

FANS gating. The file shows exemplified gating strategies of FANS in this study.

Supplementary Tables

Supplementary Table 1. Epi-Retro-Seq injection information.

Supplementary Table 2. Metadata and cluster assignment of 11,827 single neurons.

Supplementary Table 3. CH-DMGs between IT neurons projecting to different target regions and GO enrichment.

Supplementary Table 4. CH-DMGs between L5-ET subclusters and GO enrichment.

Supplementary Table 5. CG-DMRs between L5-ET subclusters and target genes assigned by GREAT.

Supplementary Table 6. CH-DMGs between L5-ET neurons projecting to different ET targets.

Supplementary Table 7. Cell counting in double labeling experiments of pons- and SC-projecting neurons.

Supplementary Table 8. Cell counting in double labeling experiments of pons- and VISp-projecting neurons.