

## **Description of Additional Supplementary Files**

**File Name:** Supplementary Data 1

**Description:** Coordinates of FIREs and common FIREs in NeuN<sup>+</sup> and NeuN<sup>-</sup> cells as well as GO terms for common FIRE-associated genes.

**File Name:** Supplementary Data 2

**Description:** Coordinates of differential- and super-FIREs in NeuN<sup>+</sup> and NeuN<sup>-</sup> cells and their associated genes.

**File Name:** Supplementary Data 3

**Description:** Enhancer-promoter interactions in NeuN<sup>+</sup> and NeuN<sup>-</sup> cells.

**File Name:** Supplementary Data 4

**Description:** Enhancer-promoter interactions in Glu and GABA neurons.

**File Name:** Supplementary Data 5

**Description:** NeuN<sup>+</sup> hypoacetylated and NeuN<sup>-</sup> hyperacetylated genes and their enriched biological processes.

**File Name:** Supplementary Data 6

**Description:** AD risk genes and their associated biological pathways.

**File Name:** Supplementary Data 7

**Description:** Genes and pathways associated with SCZ and BD GWAS via Glu and GABA H-MAGMA.