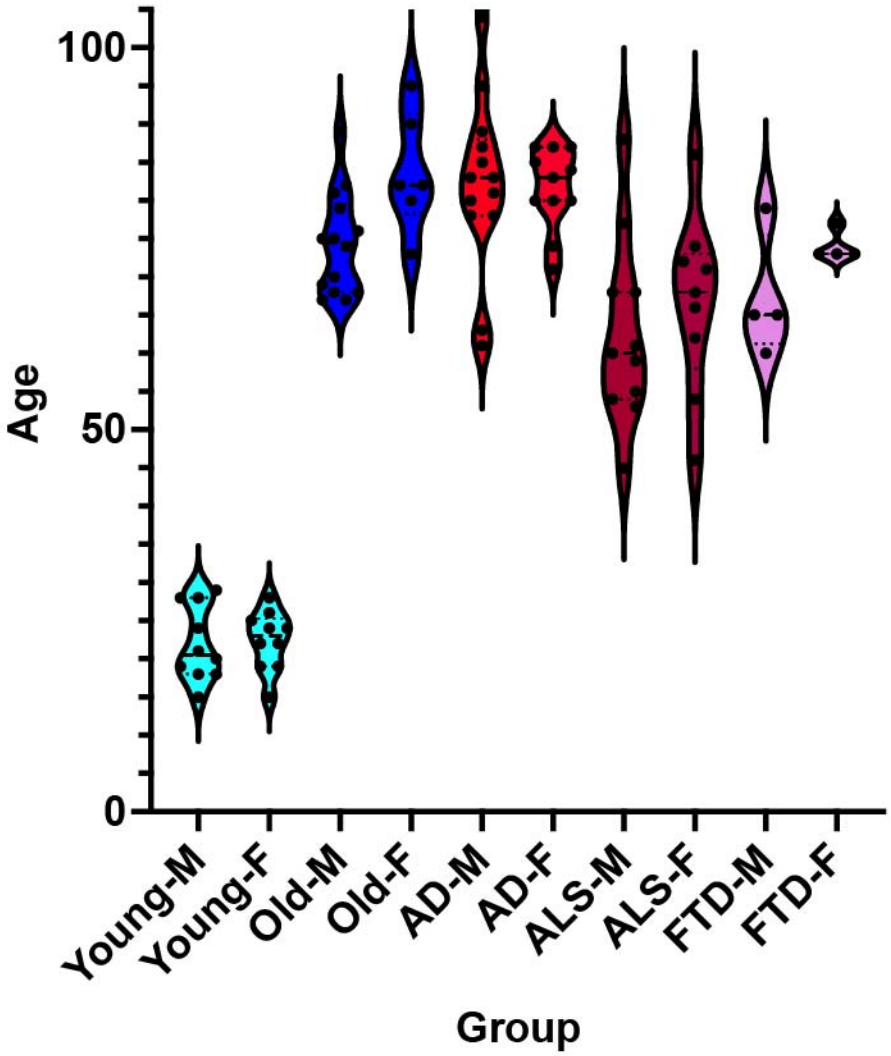
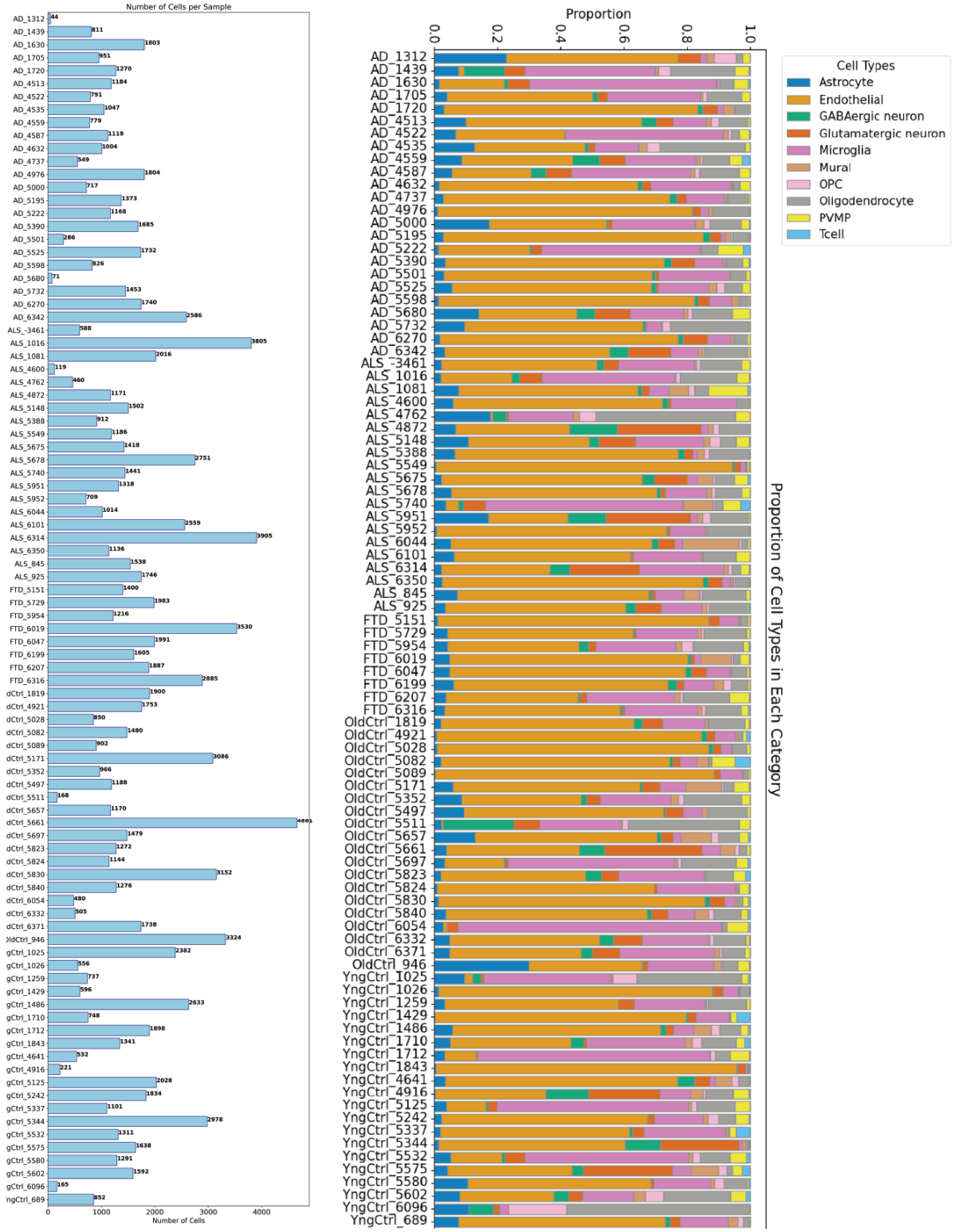
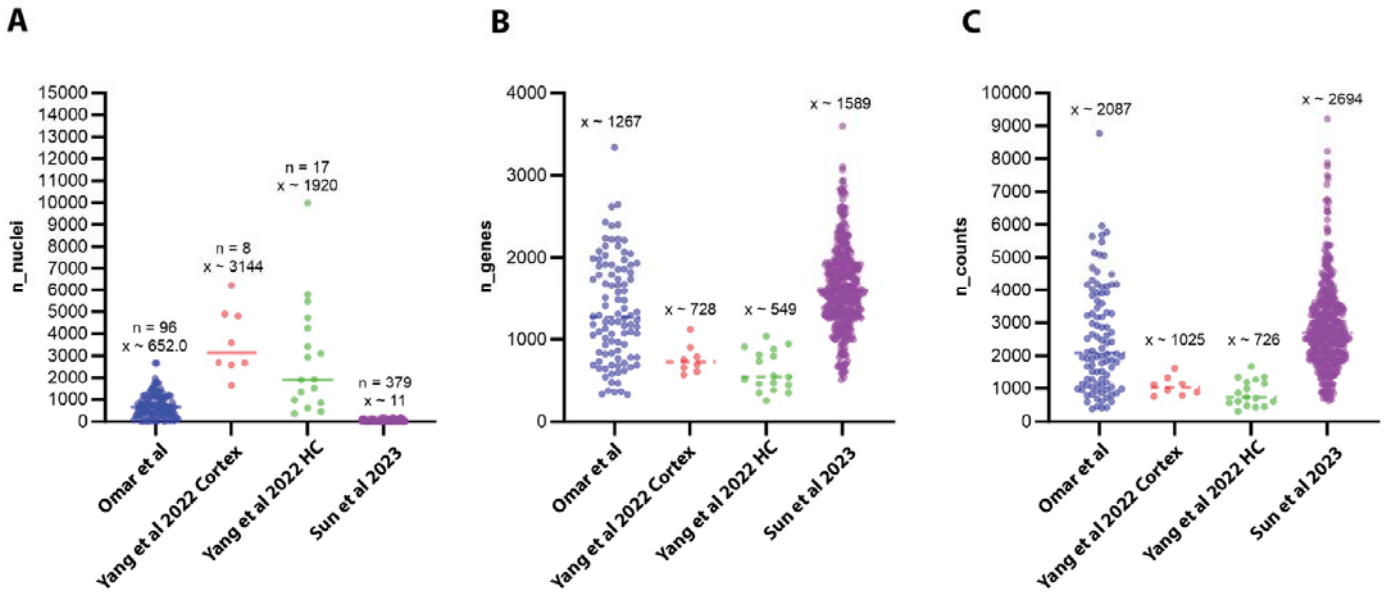


SI Figure 1. Age and sex distribution of cortical samples used.
Plots show the age of individual sample and their distribution.

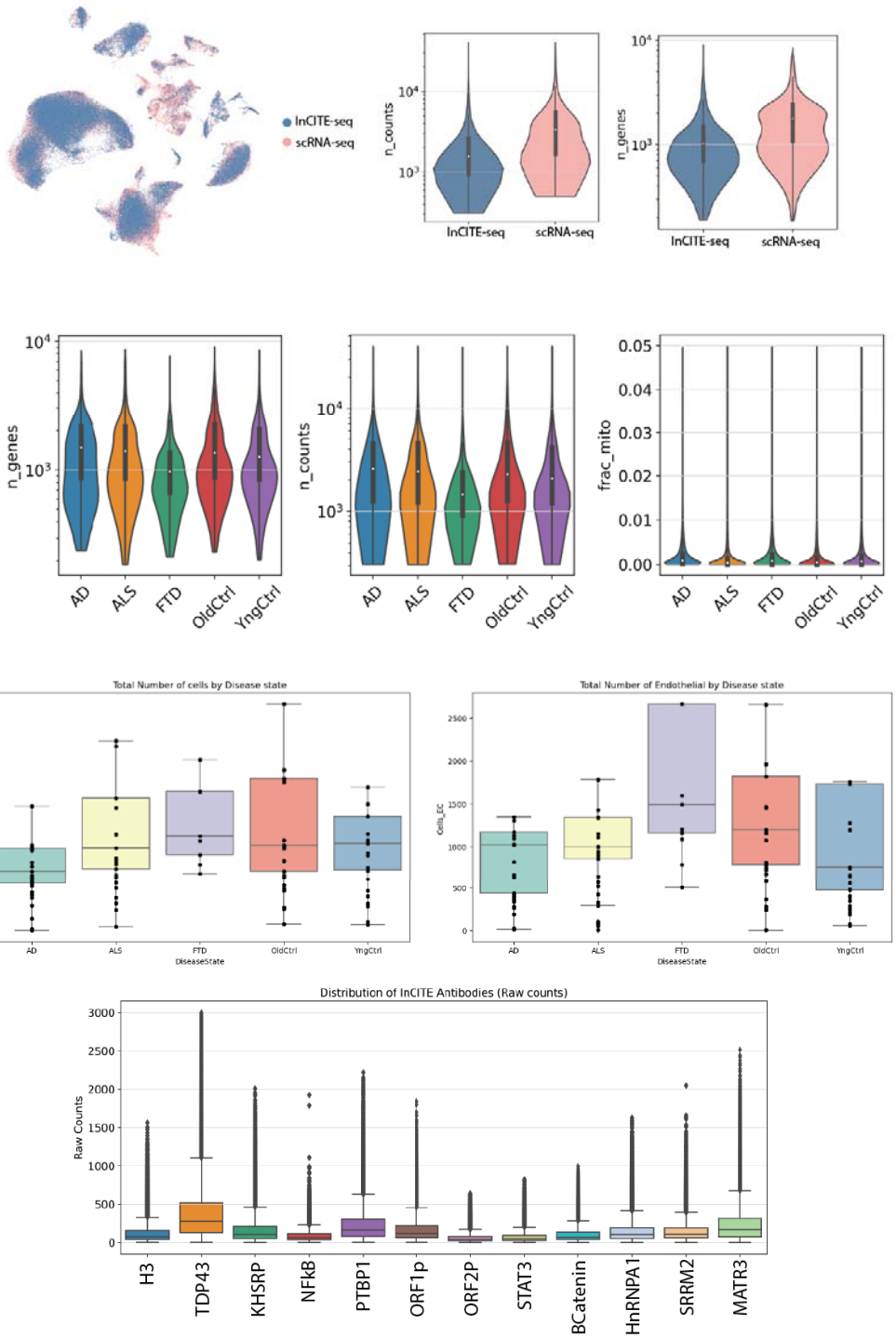


SI Figure 2. Number of nuclei and distribution of cell types in data.
Sample ids are shown on the y-axis, and plots show total nuclei (with count), endothelial nuclei (with count), and distribution of cell types (key in top left).

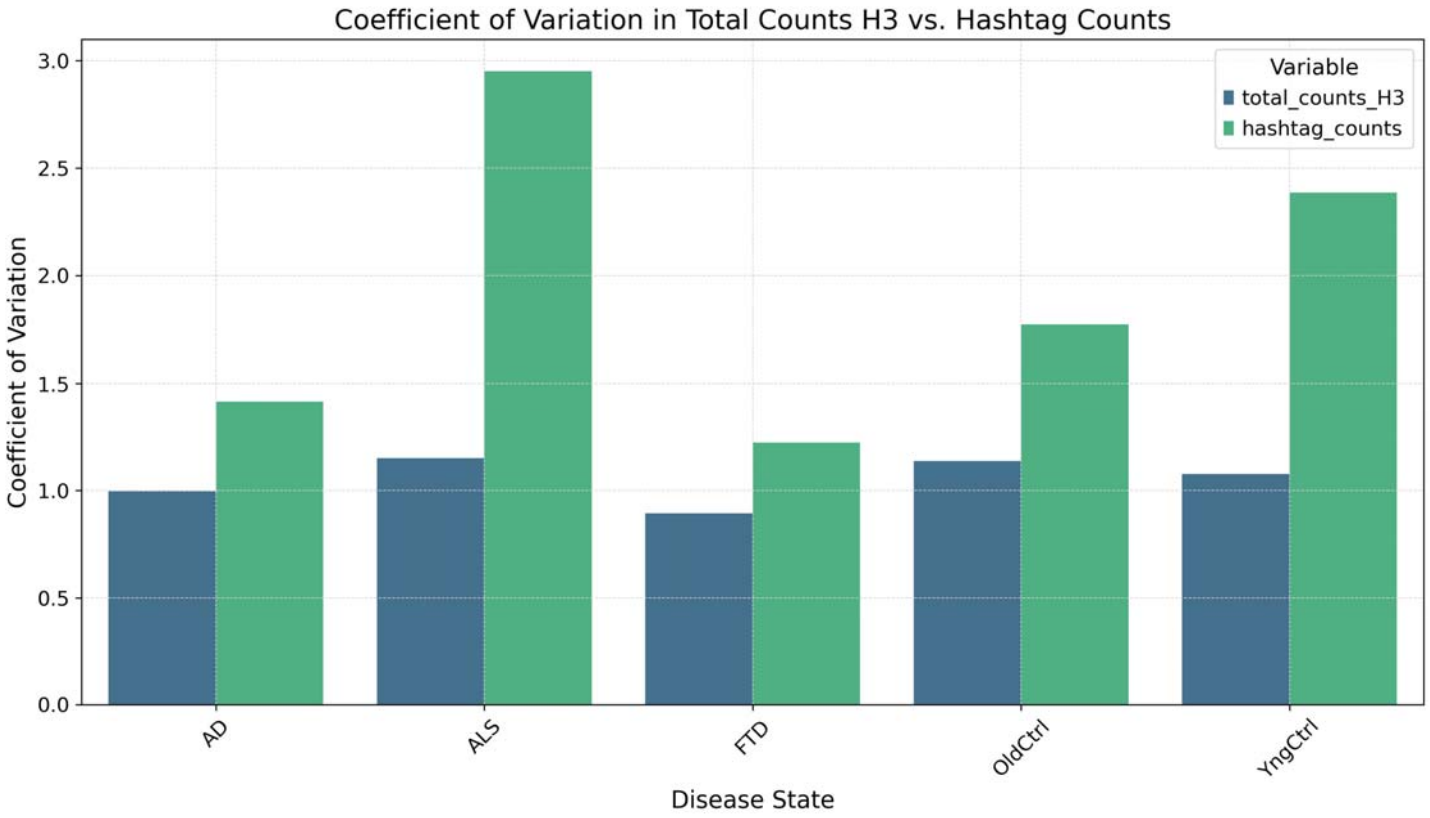


SI Figure 3. Comparison of gene counts and UMI with prior data sets.

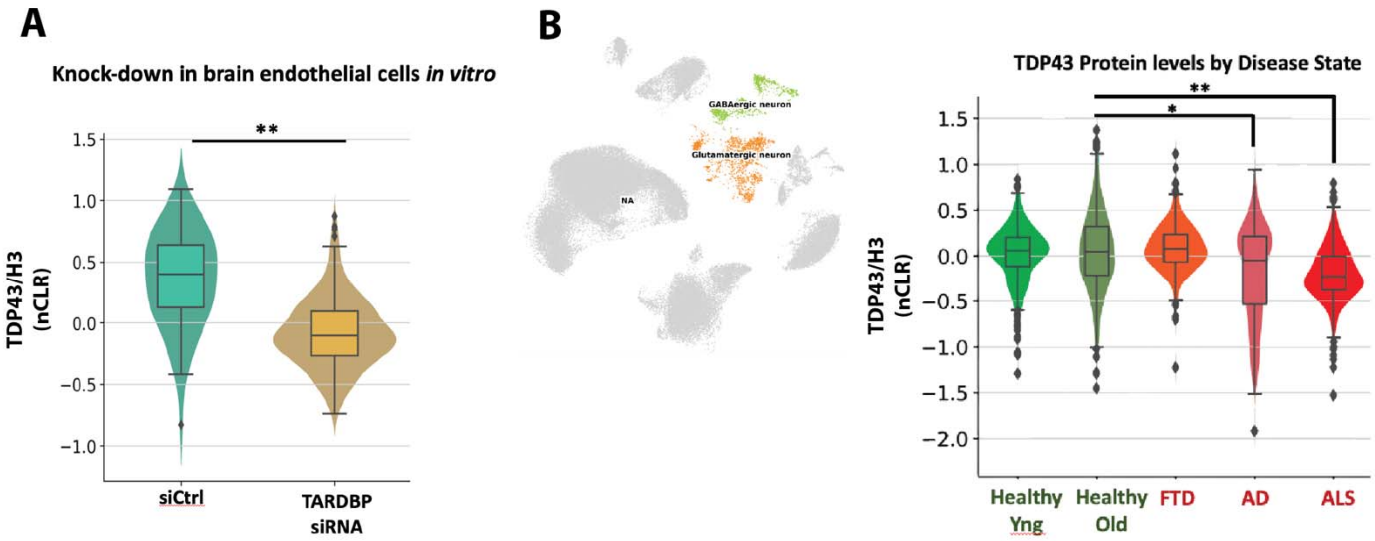
Comparison of number of nuclei per donor, and number of genes and counts per donor in data described here, relative to recently published data sets on brain vasculature and endothelium.



SI Figure 4. Comparative gene counts and umi in single nuclei data (with and without inCITE-Seq)
UMAP showing overlap between single nuclei data obtained from standard scRNA-Seq and inCITE-Seq preparations. UMI counts per cells and gene counts per cell are shown overlap, and by subcategory, along with mitochondrial RNA counts. Plots show the total number of cells by disease state in each method.

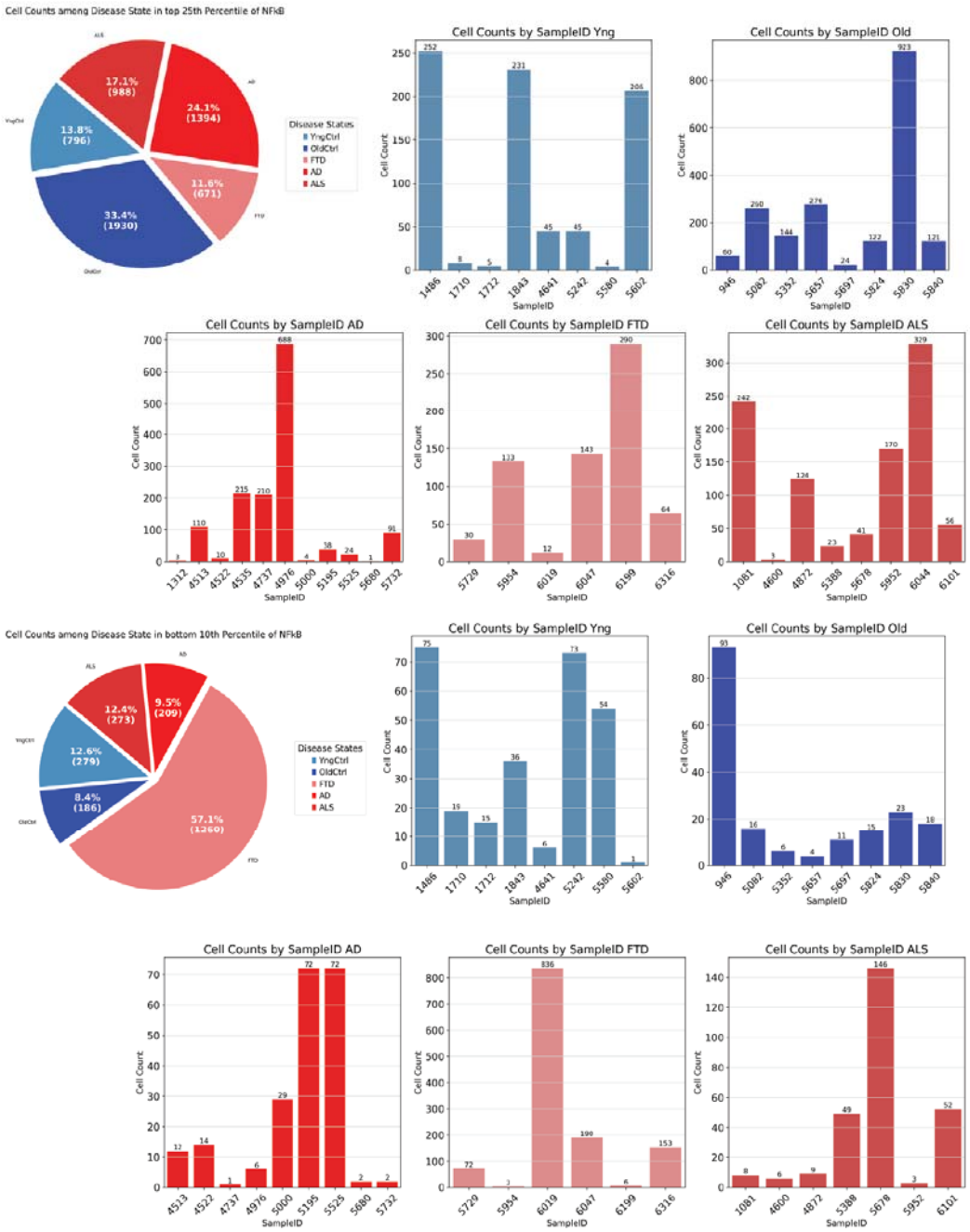


SI Figure 5. Coefficient of variation in the levels of histone and nuclear pore hashtags between nuclei by disease state. Violin plot shows coefficient of variation in levels of histone and nuclear pore hashtags across nuclei within each disease group.



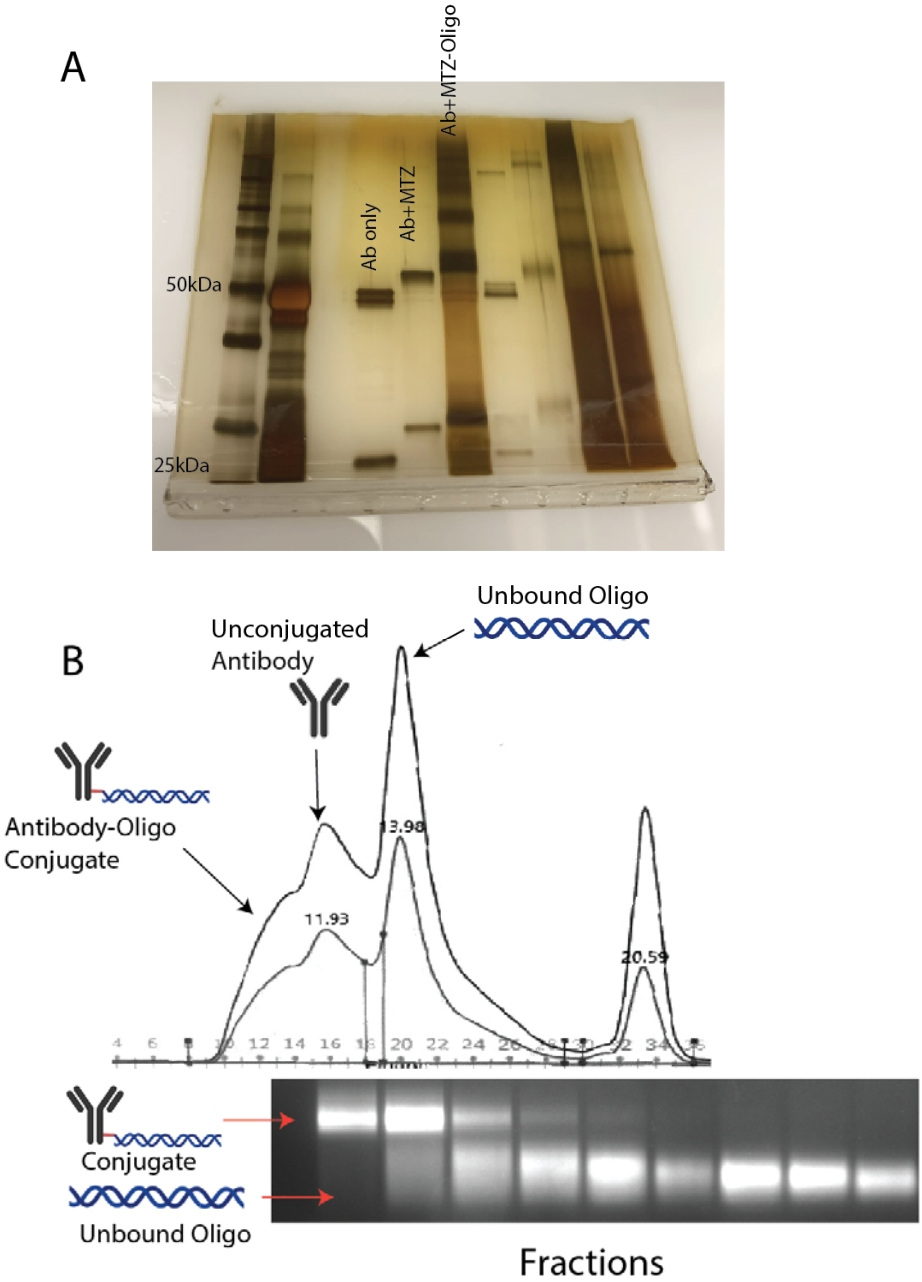
SI Figure 6. Validation of TDP-43 inCITE analysis

(A) siTDP-43 knockdown in HBEC5i human brain endothelial cell line, compared to siControl treated HBEC5i cells, and analyzed in an inCITEseq experiment along with a standard brain nuclei preparation. (B) UMAP showing neuronal clusters analyzed, and violin plots showing the levels of nuclear TDP-43 protein (relative to nuclear H3) by disease state in these neuronal clusters.



SI Figure 7. Composition of samples in extremes of p65/NFkB

Pies chart bar plots showing the proportion of cells in the top 25th percentile of p65/NFkB:H3 and the bottom 10th percentile of p65/NFkB:H3.



SI Figure 8. Size-exclusion purification of oligo conjugated antibodies.
(A) Reduced and silver stained gel showing the step wise addition of click chemistry adduct (MTZ) and oligo nucleotide (MTZ-Oligo). (B) Oligo-conjugated antibody cleanup via size exclusion chromatography. Top, a representative size exclusion chromatogram recorded with dual absorption wavelengths (260 and 280 nm). Conjugated antibodies, having the largest molecular weights, were eluted first from the column, followed by the free antibodies. Unconjugated oligonucleotides were the last to be eluted from the column. Bottom, fractions from the column were analyzed by an agarose gel stained with SybrGold showing the presence of free and conjugated oligonucleotides.