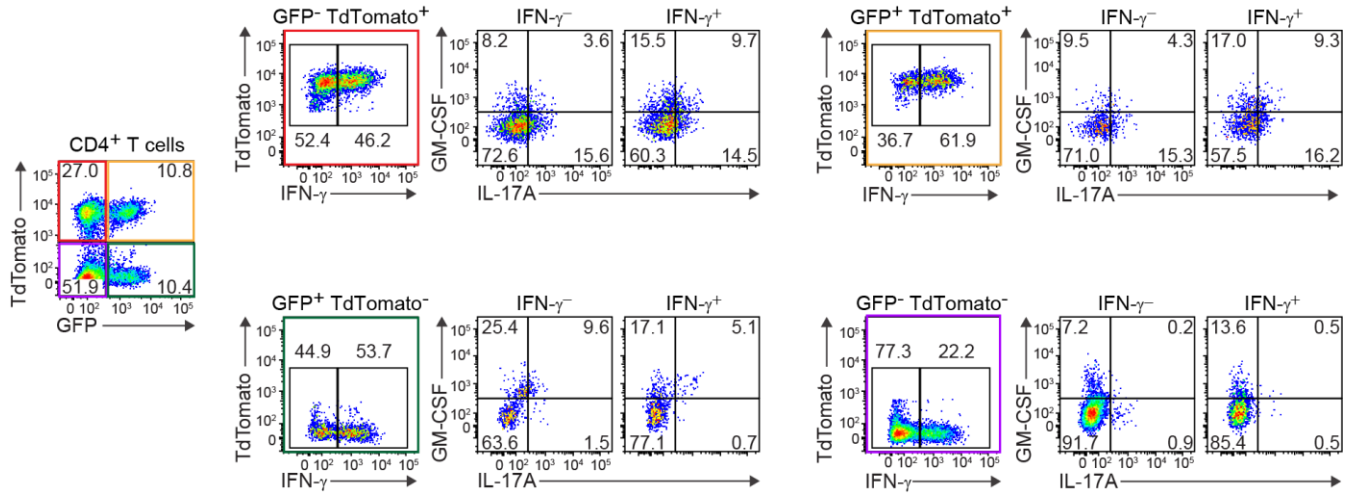
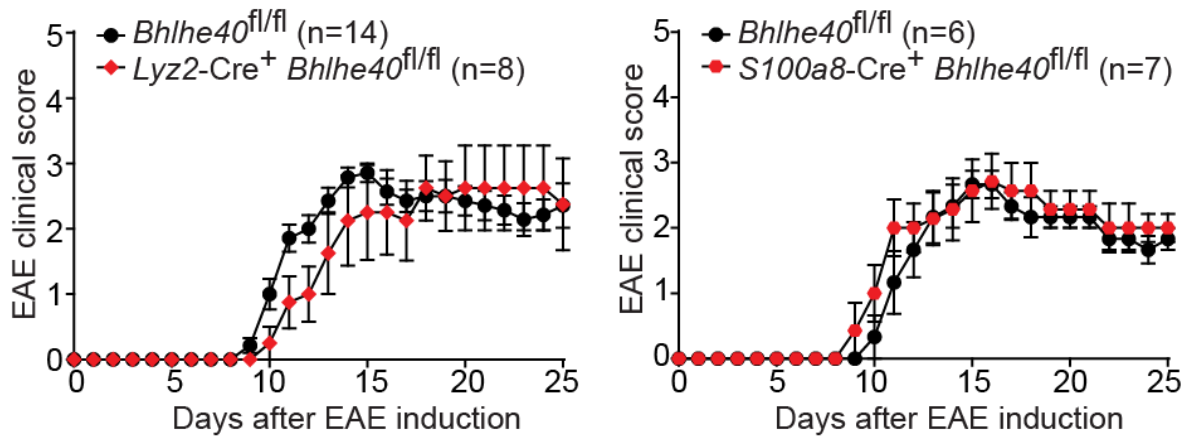


Supplemental Figure 1



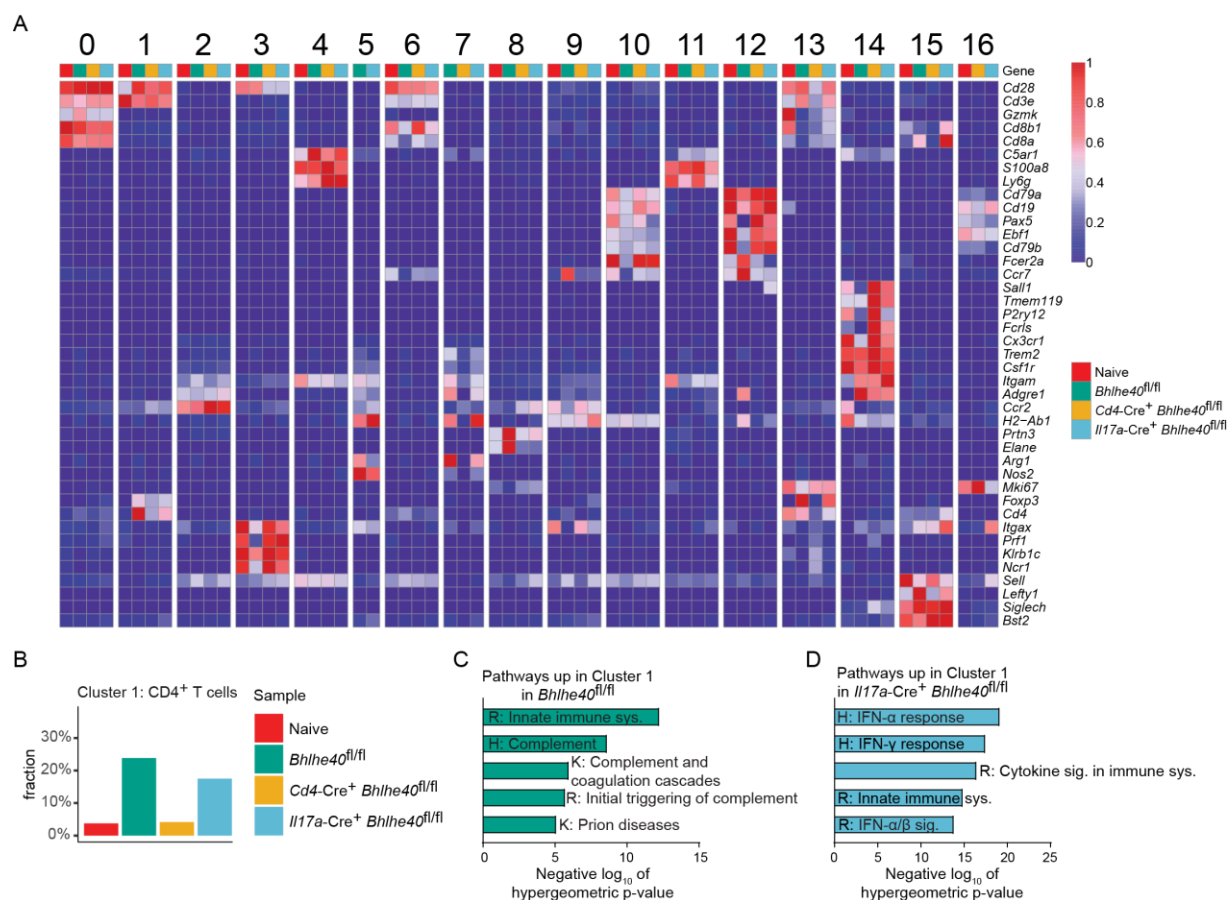
Supplemental Figure 1: Representative cytokine production from *Il17a*-Cre *Rosa26*-TdTomato *Bhlhe40*^{GFP} reporter CD4⁺ T cells. Representative intracellular cytokine staining of *Il17a*-Cre *Rosa26*-TdTomato *Bhlhe40*^{GFP} reporter CNS CD4⁺ T cells (CD45.2⁺ TCR β ⁺ TCR γ δ ⁻ CD8 α ⁻ CD4⁺) on day 14 of EAE. Gated quadrants are indicated by colored boxes.

Supplemental Figure 2



Supplemental Figure 2: No cell-intrinsic role for BHLHE40 in myeloid cells or neutrophils during EAE. Clinical EAE scores from immunized *Lyz2-Cre⁻ Bhlhe40^{fl/fl}* or *Lyz2-Cre⁺ Bhlhe40^{fl/fl}* mice (pooled from two experiments, $n = 8-14$ per group) and *S100a8-Cre⁻ Bhlhe40^{fl/fl}* or *S100a8-Cre⁺ Bhlhe40^{fl/fl}* mice (one experiment, $n = 6-7$ per group).

Supplemental Figure 3



Supplemental Figure 3: scRNA-seq cell type identifying genes and characterization of CD4⁺ T cells from *Bhlhe40*^{fl/fl} and *Il17a-Cre*⁺ *Bhlhe40*^{fl/fl} mice. (A) Gene expression heatmap of cell type identifying genes separated by cluster and by sample from scRNA-seq data from the CNS of naïve *Bhlhe40*^{fl/fl} mice or immunized *Bhlhe40*^{fl/fl}, *Cd4-Cre*⁺ *Bhlhe40*^{fl/fl}, and *Il17a-Cre*⁺ *Bhlhe40*^{fl/fl} mice at day 14 post EAE induction. (B) Fraction of CD4⁺ T cells (cluster 1) in the CNS of naïve *Bhlhe40*^{fl/fl} mice or immunized *Bhlhe40*^{fl/fl}, *Cd4-Cre*⁺ *Bhlhe40*^{fl/fl}, and *Il17a-Cre*⁺ *Bhlhe40*^{fl/fl} mice at day 14 post EAE induction (C and D) Differentially expressed genes (adjusted p-value >0.05 and log₂ fold-change ≥0.35) were cross-referenced to Hallmark (H), Reactome (R), and KEGG (K) gene sets in the MSigDB for enriched pathways between immunized *Bhlhe40*^{fl/fl} and *Il17a-Cre*⁺ *Bhlhe40*^{fl/fl} cluster 1 cells.