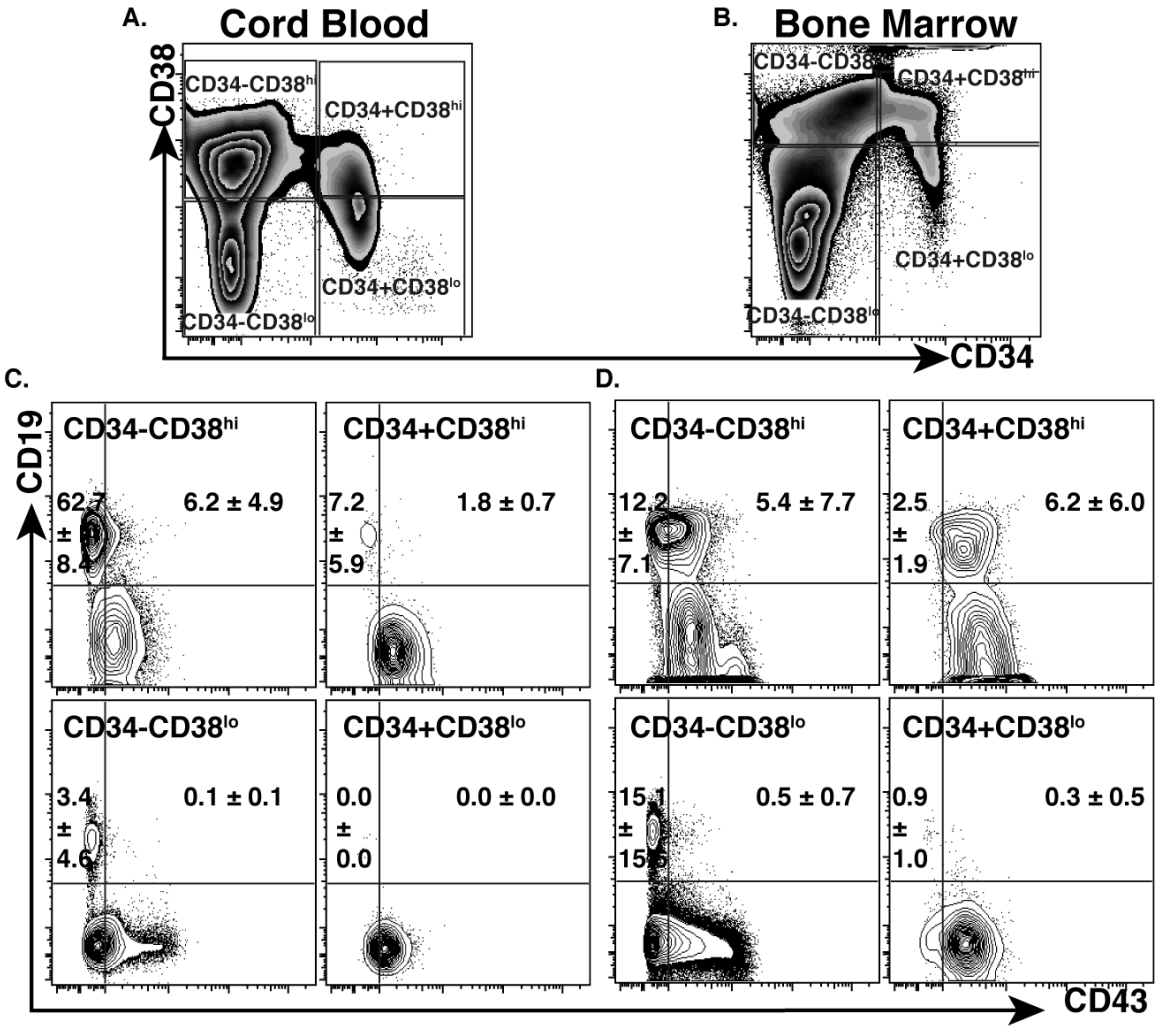
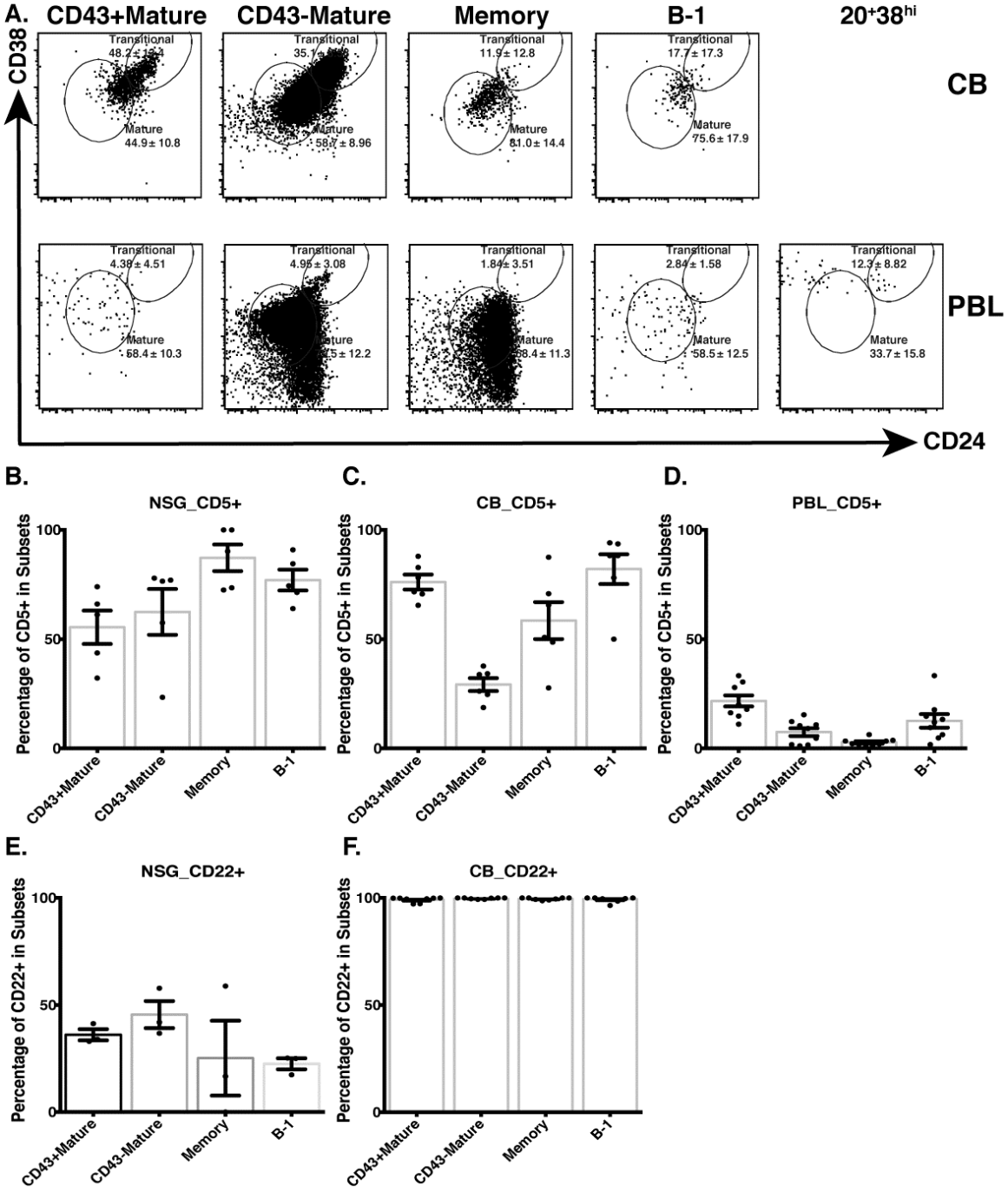
SUPPLEMENTARY FIGURES

Supplementary Figure S1.



S1. Frequency of cells coexpressing CD19 and CD43 increase as $CD34^+$ cells lose CD34 and gain CD38 expression. Cord blood (n=9) and bone marrow (n=7) mononuclear cells were stained with anti-CD3/CD4/CD7, anti-CD19, anti-CD38, anti-CD34, anti-CD43, and Aqua Dead Cell kit **A-B.** Plots show CD38 versus CD34 expression on live CD3/4/7- gated cells from cord blood (**A**) and bone marrow (**B**). **C-D.** Plots show expression of CD19 versus CD43 on selected CD38/CD34 subsets from cord blood (**C**) and bone marrow (**D**). Numbers in each quadrant indicate frequencies (±SD) of CD19/CD43 subsets in $CD34^-CD38^{lo}$, $CD34^-CD38^{hi}$, $CD34^+CD38^{hi}$ and $CD34^+CD38^{lo}$ cells.

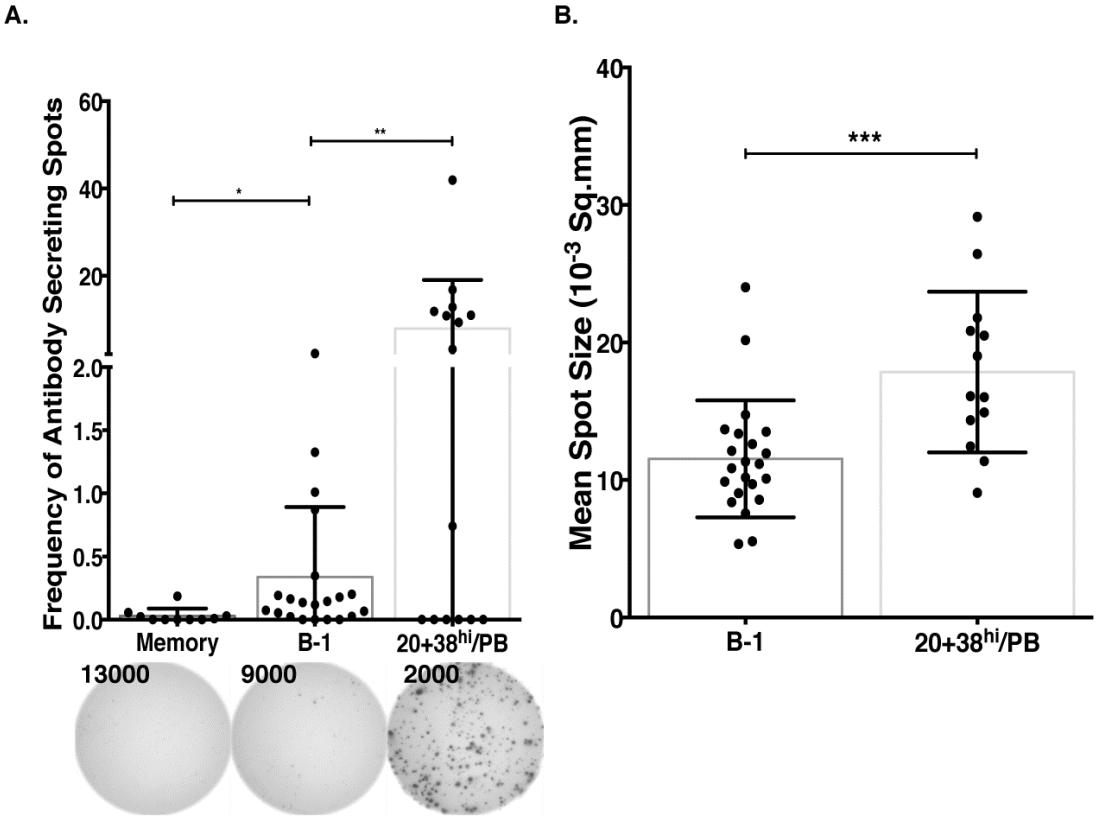
Supplementary Figure S2.



S2. Surface antigen expression of B cell subsets from HIS mice as compared to those from cord blood and adult peripheral blood. A. Plots display CD24 versus CD38 expression of different B cell subsets from Cord blood (n=6, top row) and adult peripheral blood (n=9, bottom row). Numbers show the average frequencies of gated cells and standard deviations. **B-D.** Plots

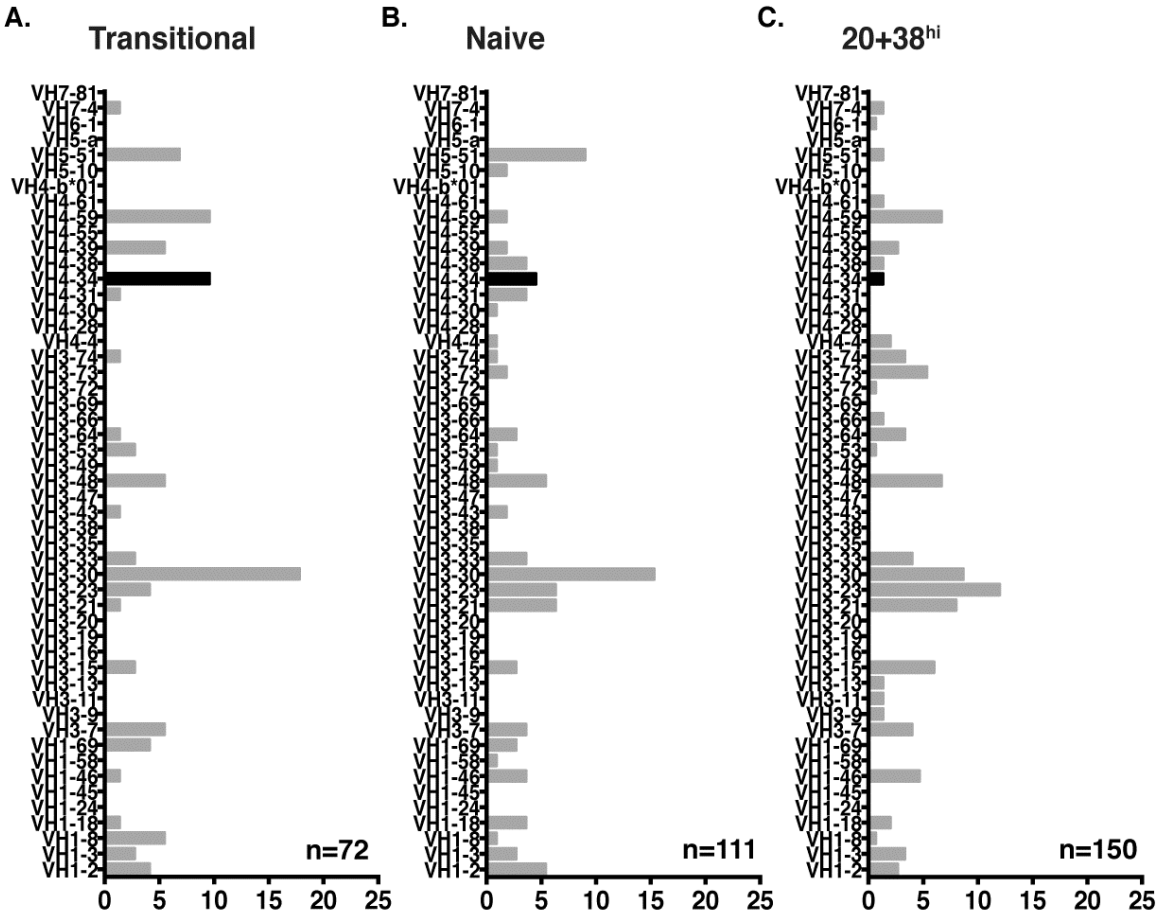
show the average frequencies of CD5+ cells in each B cell subset from HIS mice (B, n=5), cord blood (C, n= 6), and adult peripheral blood (D, n=9). **E-F.** Plots show the average frequencies of CD22+ cells in each B cell subset from HIS mice (E, n=3), cord blood (F, n= 8).

Supplementary Figure S3.



S3. HIS B-1 and CD20^{+}CD38^{hi} preplasmablast phenotype cells spontaneously secrete antibodies, and memory cells do not. A. Plots show the frequency of IgM antibody secreting spots from each cell subset following sort purification (n=10-21). Representative images of developed ELISPOT assays are shown with the top left number indicating the number of input cells that were plated. **B.** Plots show the mean spot size of IgM secreted antibodies by each subset.

Supplementary Figure S4.



S4. The pattern of immunoglobulin variable region usage by splenic HIS B-2 cell subsets. Sort purified B-2 cells were dispensed by single cell sorting into 96 well plates, and expressed VH regions were individually amplified for sequence analysis. **A-C.** Percentages of individual VH genes expressed by HIS B-2 cell subsets, HIS transitional (Trans, $CD19^{+}CD20^{+}CD27^{-}MTG^{+}$), HIS naïve (naïve, $CD19^{+}CD20^{+}CD27^{-}CD43^{-}MTG^{-}$) and HIS pre-plasmablasts ($CD20^{+}CD28^{hi}$).