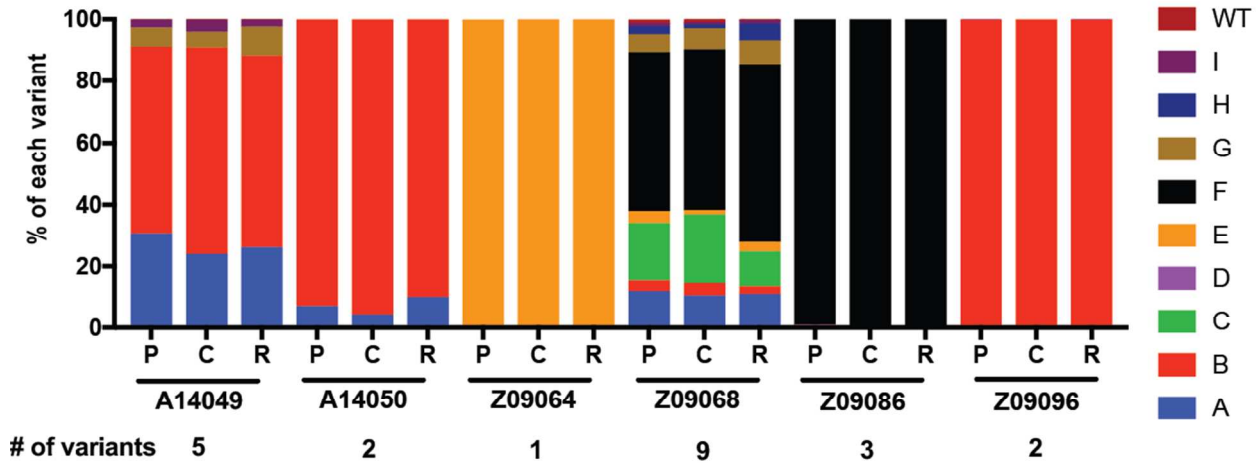
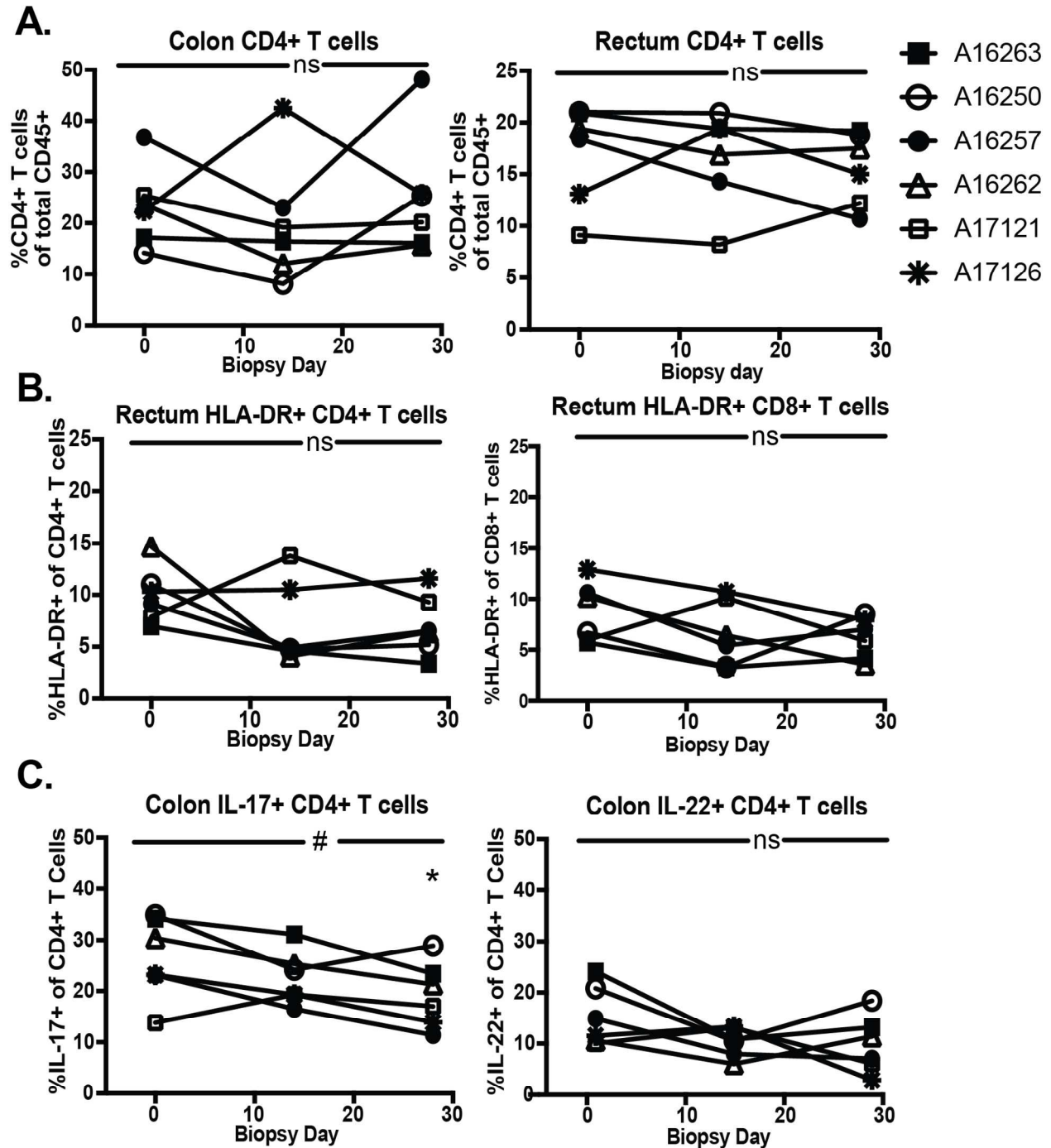


Figures and figure legends



Supplementary Figure 1. Representation of clonal viral variants in rhesus macaque blood and tissues following intrarectal infection with SIV_{Mac239x} swarm virus. Stacked bar graph displaying the percentage of each clonal variant of the swarm virus inoculation in plasma (P), colon (C), and rectum (R) 14 days post-SIV. The number of total variants detected in each animal is below each animal number. Each bar represents n=1.



Supplementary Figure 2. Effects of longitudinal biopsy sampling on gastrointestinal T cell frequencies, phenotype, and functionality. T cell parameters measured by flow cytometry on cells isolated from longitudinal gastrointestinal biopsies taken from uninfected male rhesus macaques. A.) CD4+ T cells as a percentage of total

live, CD45+ leukocytes measured in leukocytes isolated from colon and rectal biopsies.

B.) Percentage of HLA-DR+ CD4+ T cells and HLA-DR+ CD8+ T cells measured in

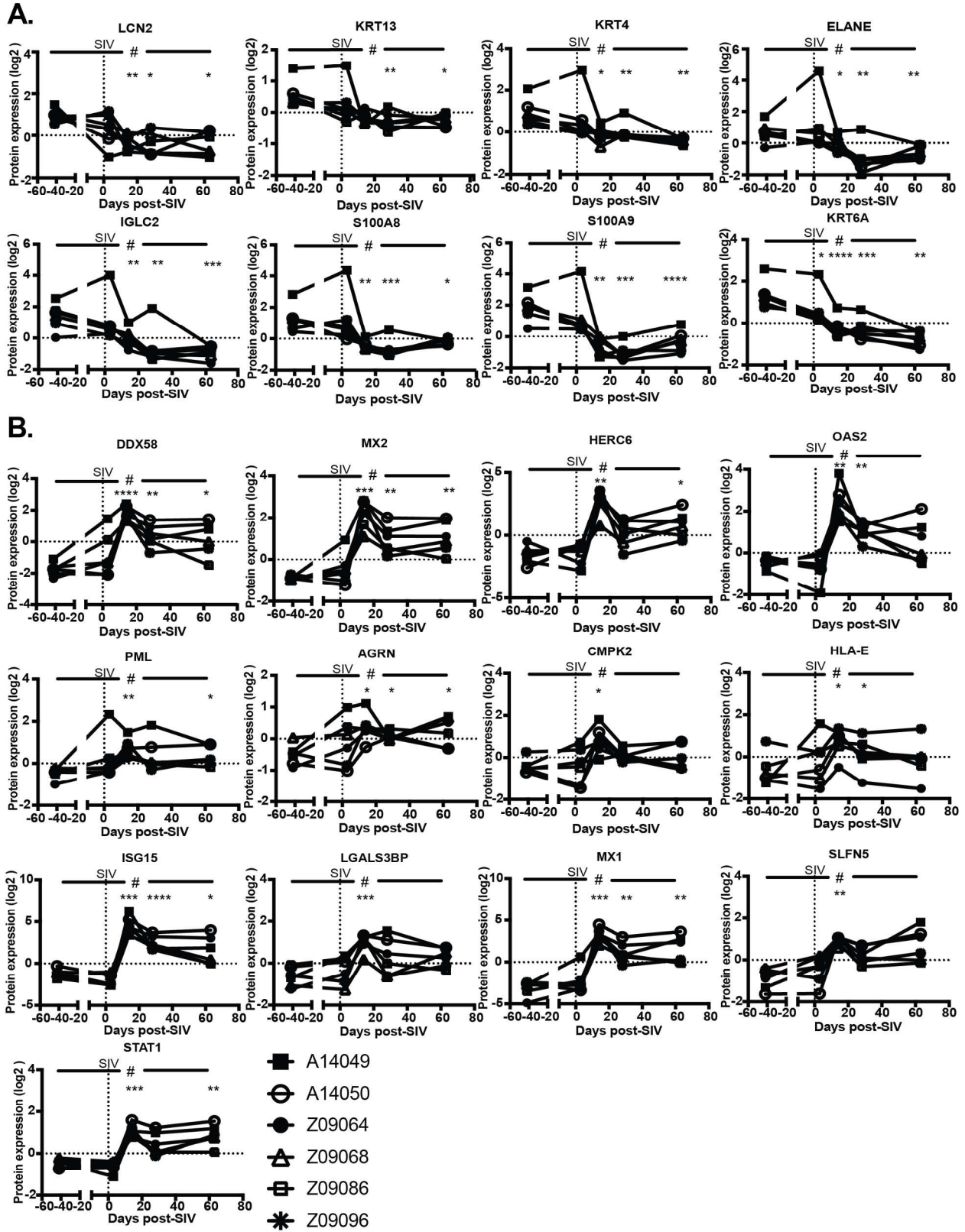
leukocytes isolated from rectum biopsies. C.) The percentage of total CD4+ T cells

expressing IL-17 or IL-22 after 14 hours at 37°C with 10 ng/ml PMA and 1 µg/ml

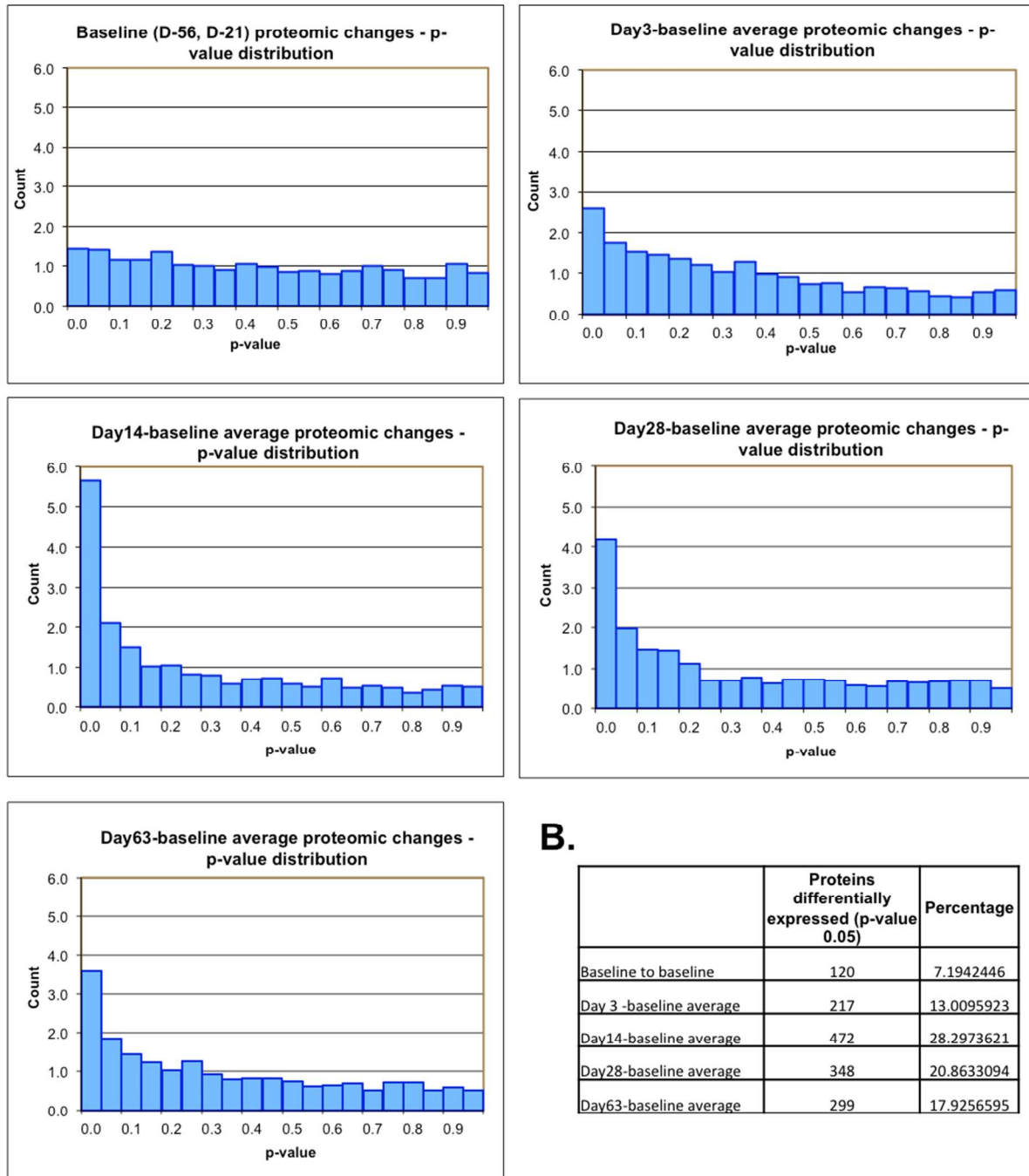
lonomycin measured in leukocytes isolated from colon biopsies. All data reported are

individual measurements for n=6. Significant differences determined by ANOVA with a

p-value<0.05 denoted by #.

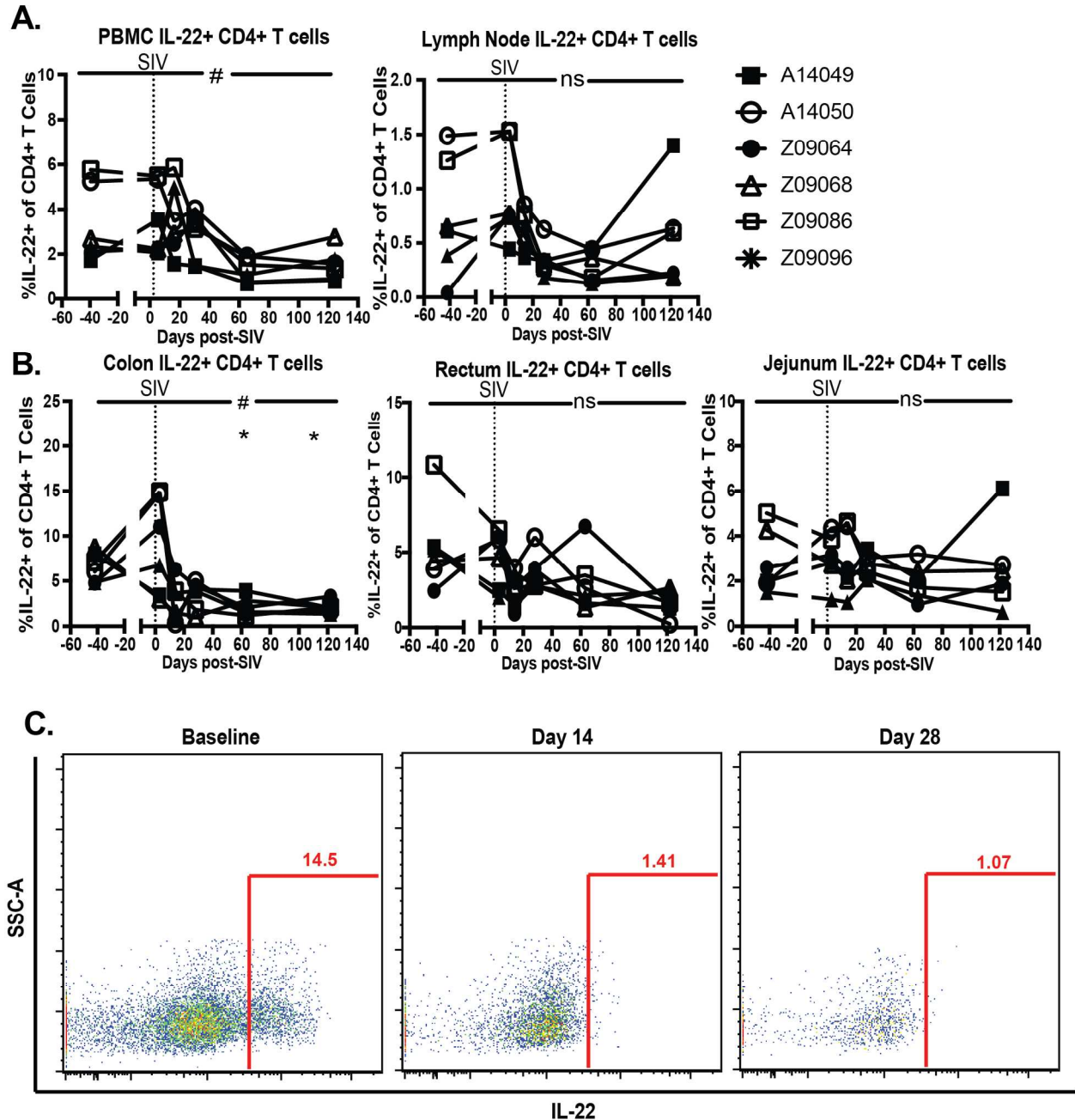


Supplementary Figure 3. Alterations of individual proteins following intrarectal infection SIV_{Mac239x}. Individual proteins altered following SIV infection as measured by mass spectrometry. A. Proteins downregulated 2-fold (5% FDR, n=6) post-SIV. B. Proteins upregulated 2-fold (5% FDR, n=6) post-SIV. All data reported are individual measurements for n=6. Significant differences determined by ANOVA with a p-value<0.05 denoted by #. Dunnett's post-hoc analyses were performed comparing post-SIV timepoints to baseline with an adjusted p-value<0.05 denoted with *, <0.01 denoted with **, <0.001 denoted with ***, and <0.0001 denoted with ****.

A.

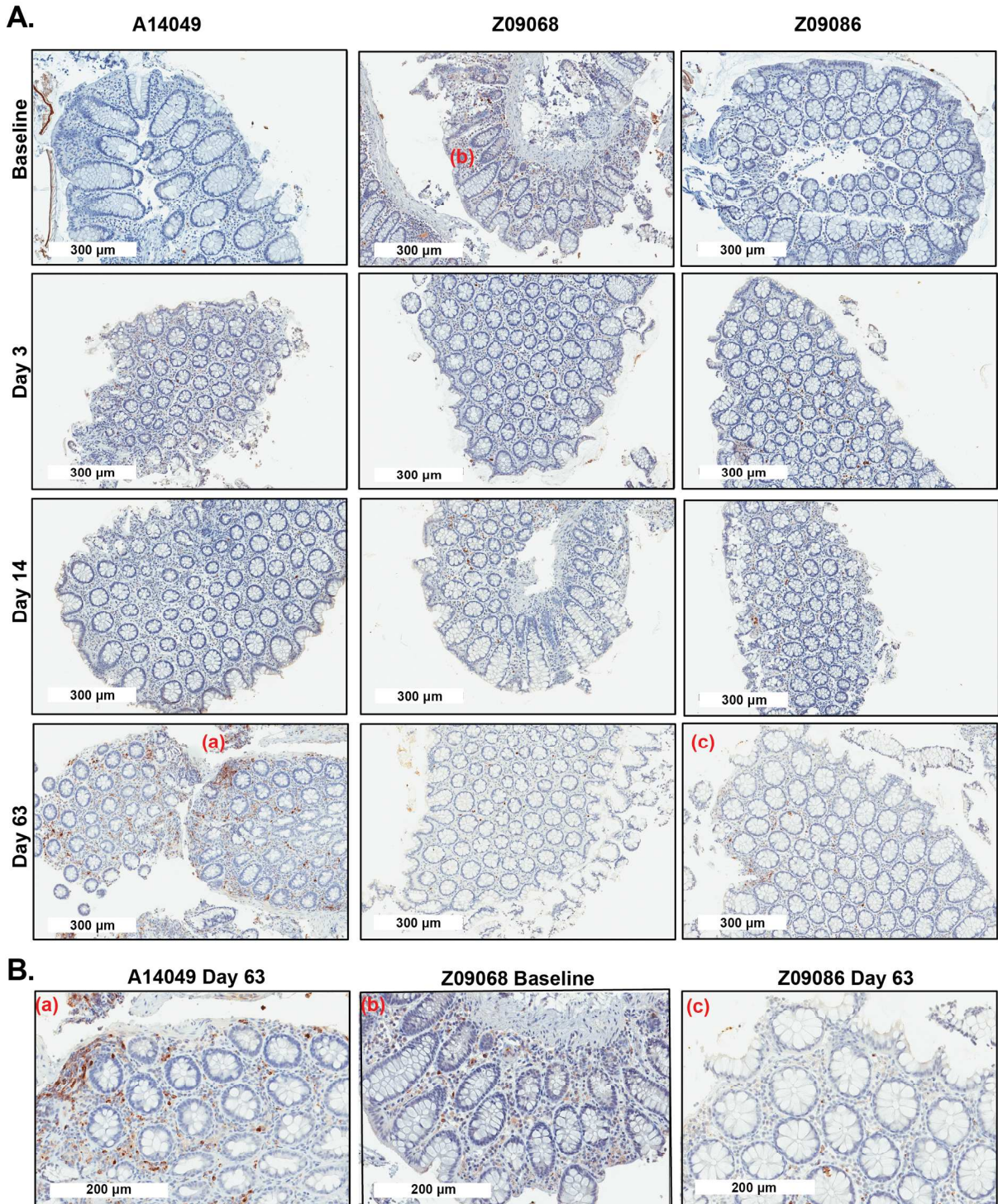
Supplementary Figure 4. *p*-value distributions of altered proteins in longitudinal colon biopsies pre- and post-SIV. Comparison of *p*-value distributions of altered proteins between longitudinal baseline timepoints and post-infection timepoints. A. *p*-value distributions of proteins altered between baseline timepoints and between post-

infection timepoints and average baseline values (n=6). B. Total number of altered proteins at each timepoint and the percentage of total proteins identified with a p-value<0.05.



Supplementary Figure 5. Kinetics of Th22 cell depletion in the periphery and mucosa following intrarectal SIV infection. The percentage of total CD4+ T cells

expressing IL-22 after 14 hours at 37°C with 10 ng/ml PMA and 1 µg/ml Ionomycin was measured at each timepoint. A.) Percentage of IL-22+ CD4+ T cells in PBMCs and peripheral lymph nodes after stimulation. B.) Percentage of IL-22+ CD4+ T cells in leukocytes isolated from colon, rectum, and jejunum biopsies after stimulation. C.) Representative staining of stimulated leukocytes isolated from colon biopsies taken at baseline, 14 days post-SIV, and 28 days post-SIV. All data reported are individual measurements for n=6. Significant differences determined by ANOVA with a p-value<0.05 denoted by #. Dunnett's post-hoc analyses were performed comparing post-SIV timepoints to baseline with an adjusted p-value<0.05 denoted with *, <0.01 denoted with **, <0.001 denoted with ***, and <0.0001 denoted with ****.



Supplementary Figure 6. Representative myeloperoxidase staining of colon tissues in rhesus macaques following intrarectal infection with $SIV_{Mac239x}$.

Formalin-fixed paraffin embedded colon biopsy tissues stained for myeloperoxidase (MPO) and imaged by microscopy. A.) Representative 100x images colon biopsy tissue stained for MPO pre- and post-SIV. B.) Representative 200x images of colon biopsy tissue stained for MPO pre-and post-SIV. Images represent regions of positive MPO staining (a,b) or negative MPO staining (c) selected from 100x images in part A.