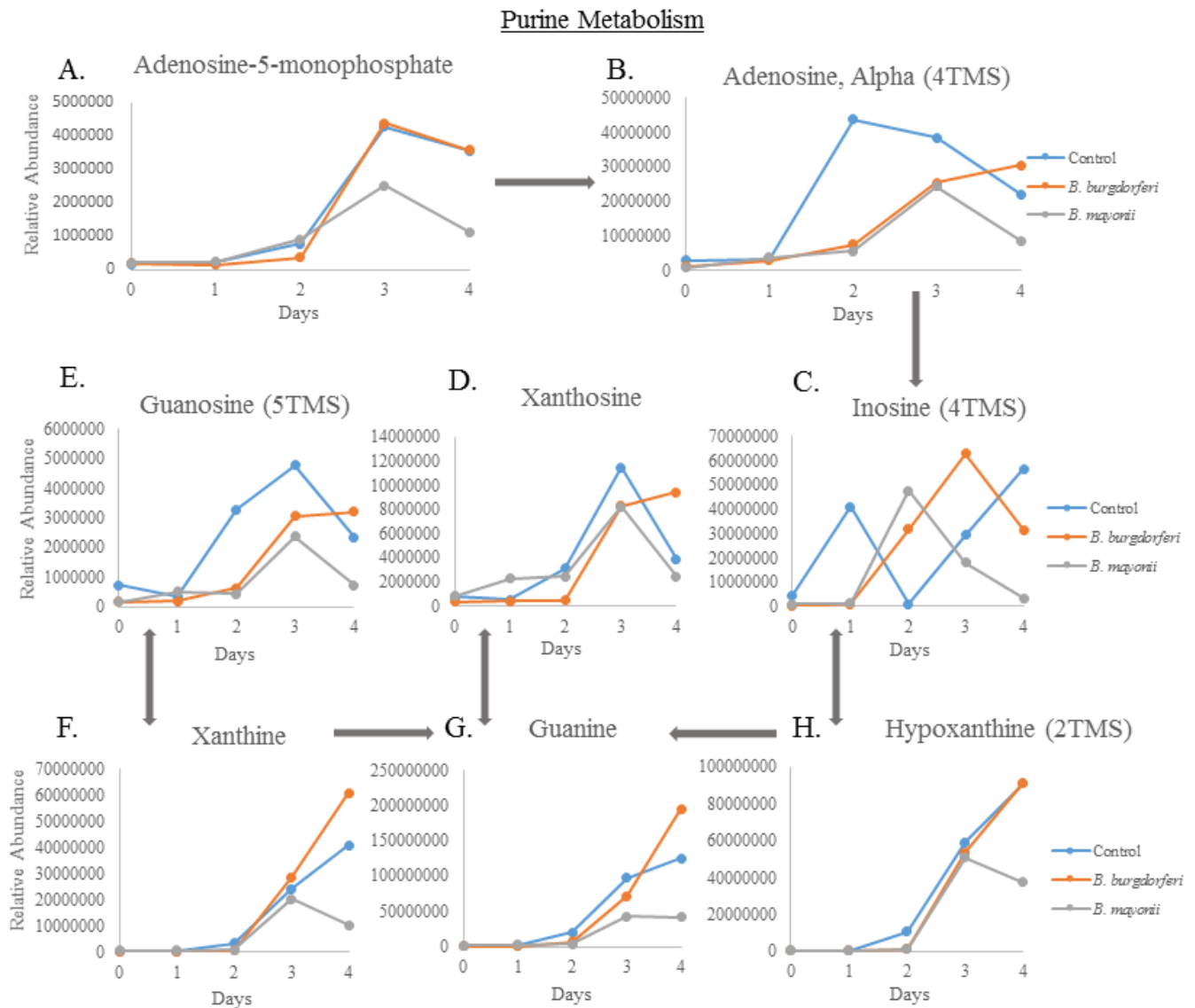1 **Metabolomics of the tick-*Borrelia* interaction during the nymphal tick blood meal**
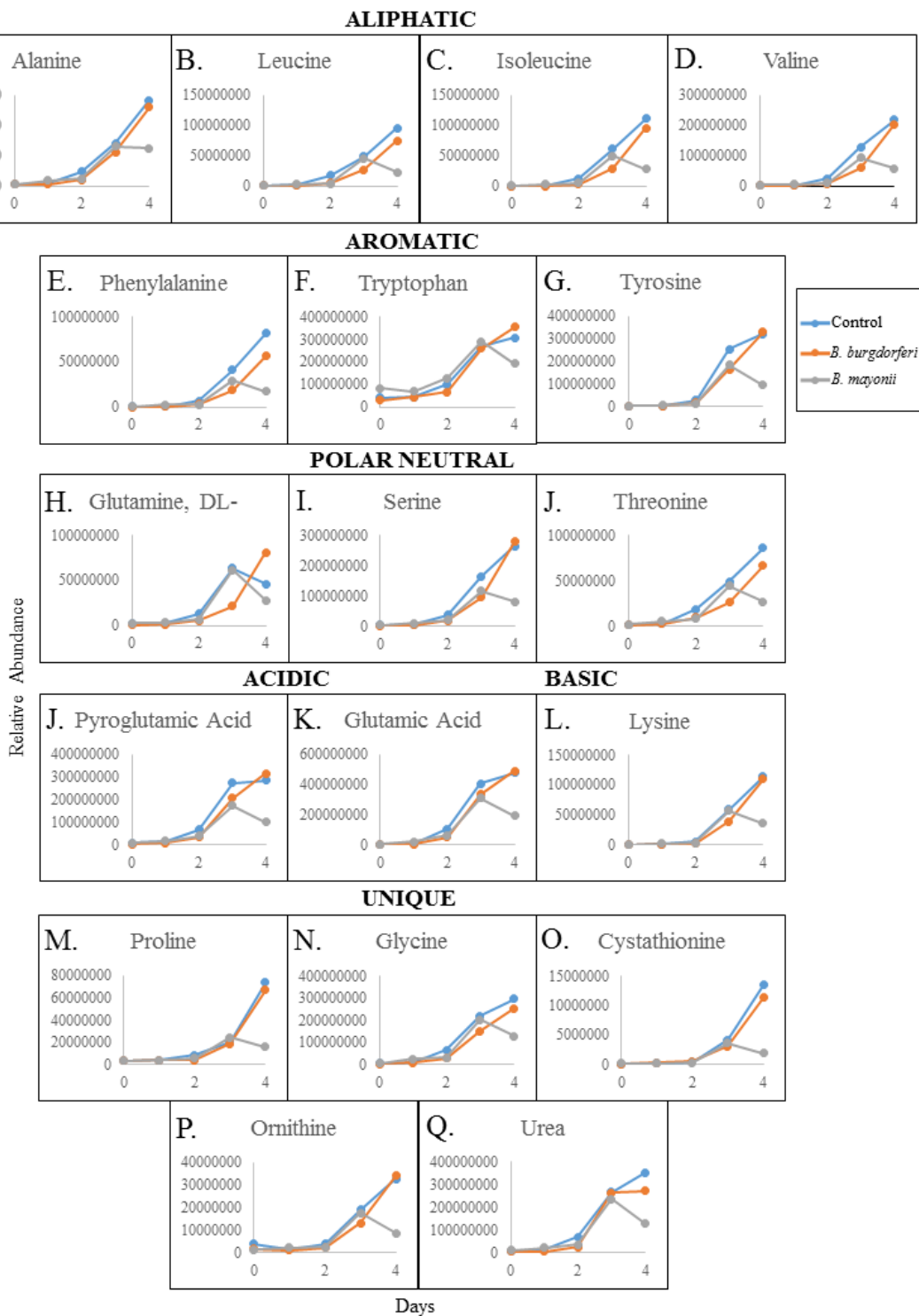
2 J. Charles Hoxmeier[1]‡, Amy C. Fleshman[1]‡*, Corey D. Broeckling[2], Jessica E. Prenni[2], Marc C. Dolan[1], Kenneth

3 L. Gage[1], and Lars Eisen[1]
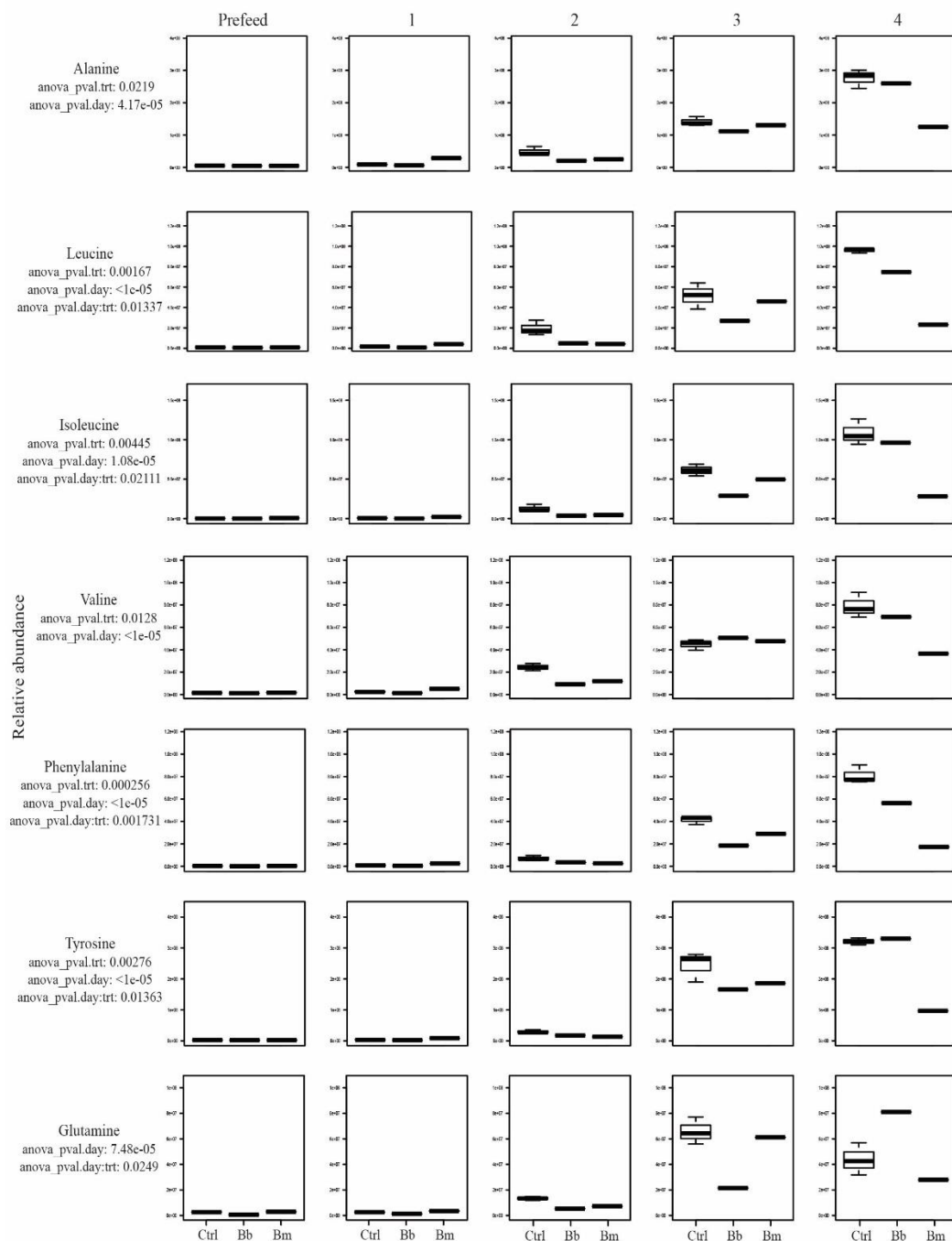
4 **Supplementary Information**

5 **Supplementary Figure 1: Purine Pathway Trends** Flux over time of statistically significant (ANOVA $p \leq 0.05$)

6 metabolites involved in purine metabolic pathway in uninfected (control) *Ixodes scapularis* nymphs versus

7 nymphs infected with the Lyme disease spirochetes *Borrelia burgdorferi* or *Borrelia mayonii*. TMS:trimethylsilyl

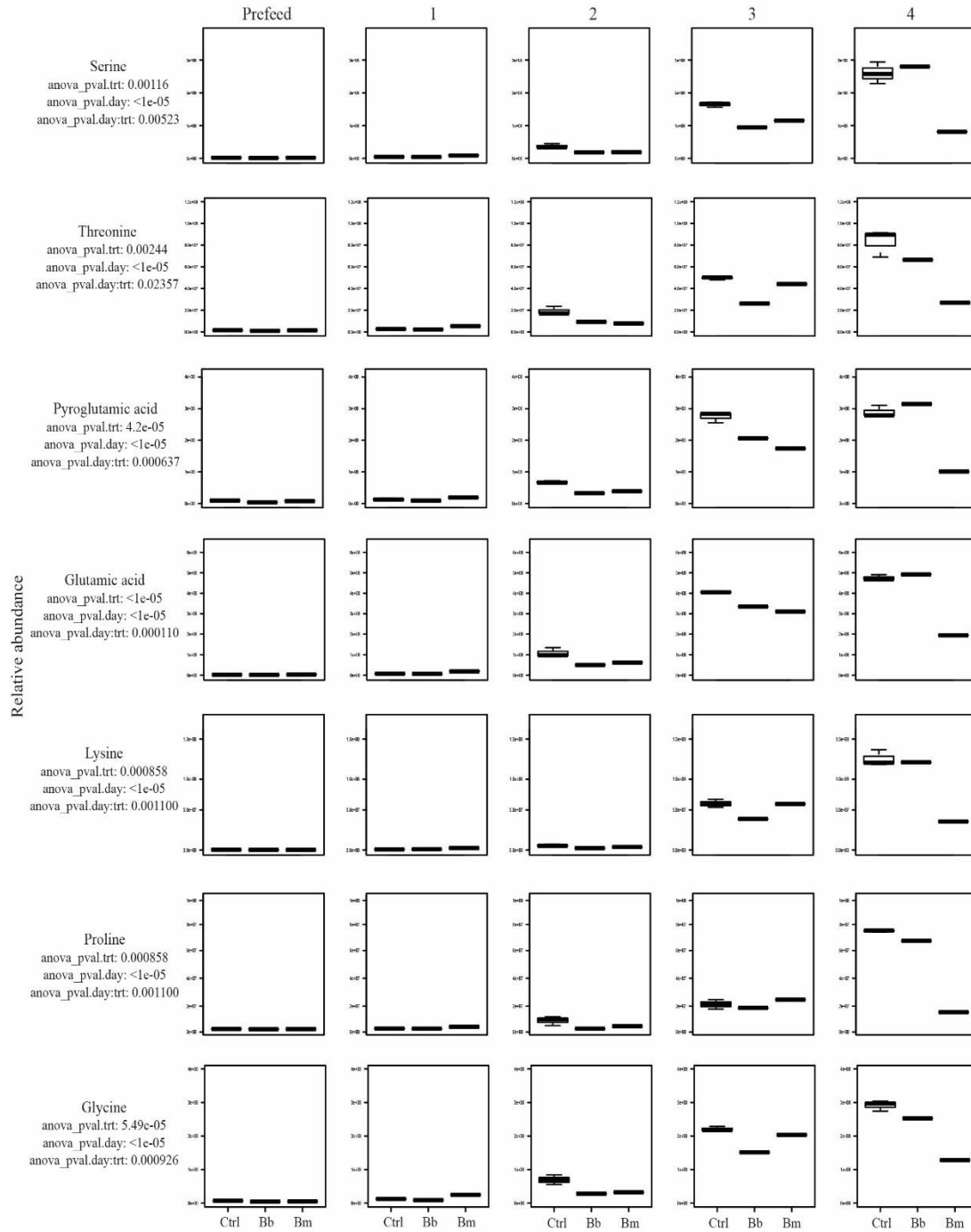8 derivative from GC-MS analysis.

9

Supplementary Figure 2: Amino Acid Trends Accumulation over time of statistically significant (ANOVA p≤0.05) amino acids in uninfected (control) *Ixodes scapularis* nymphs versus nymphs infected with the Lyme disease spirochetes *Borrelia burgdorferi* or *Borrelia mayonii*.

Supplementary Figure 3 Part 1: Amino Acids Box and Whisker Plots (1 of 3) Accumulation over time of statistically significant (ANOVA p≤0.05) amino acids in uninfected (control) *Ixodes scapularis* nymphs versus nymphs infected with the Lyme disease spirochetes *Borrelia burgdorferi* or *Borrelia mayonii*.
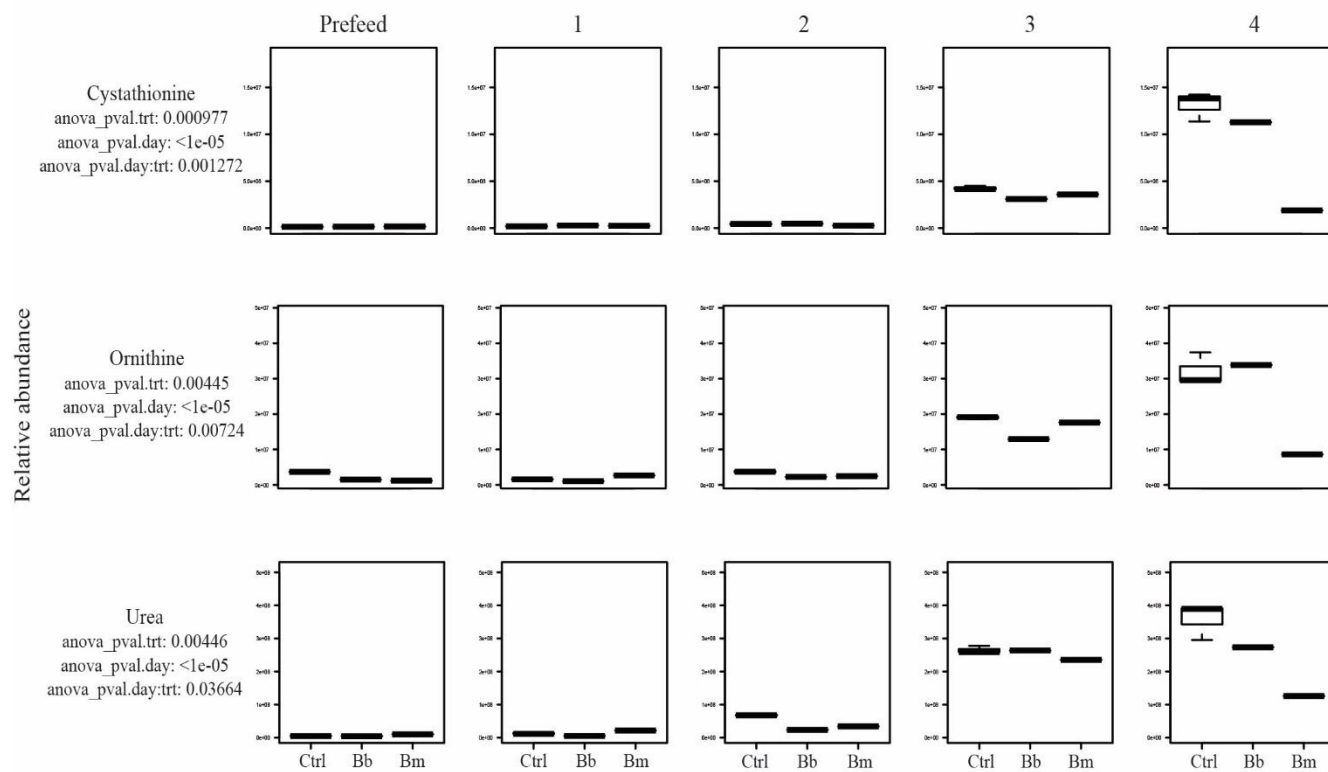
Supplementary Figure 3 Part 2: Amino Acids Box and Whisker Plots (2 of 3) Accumulation over time of statistically significant (ANOVA p≤0.05) amino acids in uninfected (control) *Ixodes scapularis* nymphs versus nymphs infected with the Lyme disease spirochetes *Borrelia burgdorferi* or *Borrelia mayonii*.
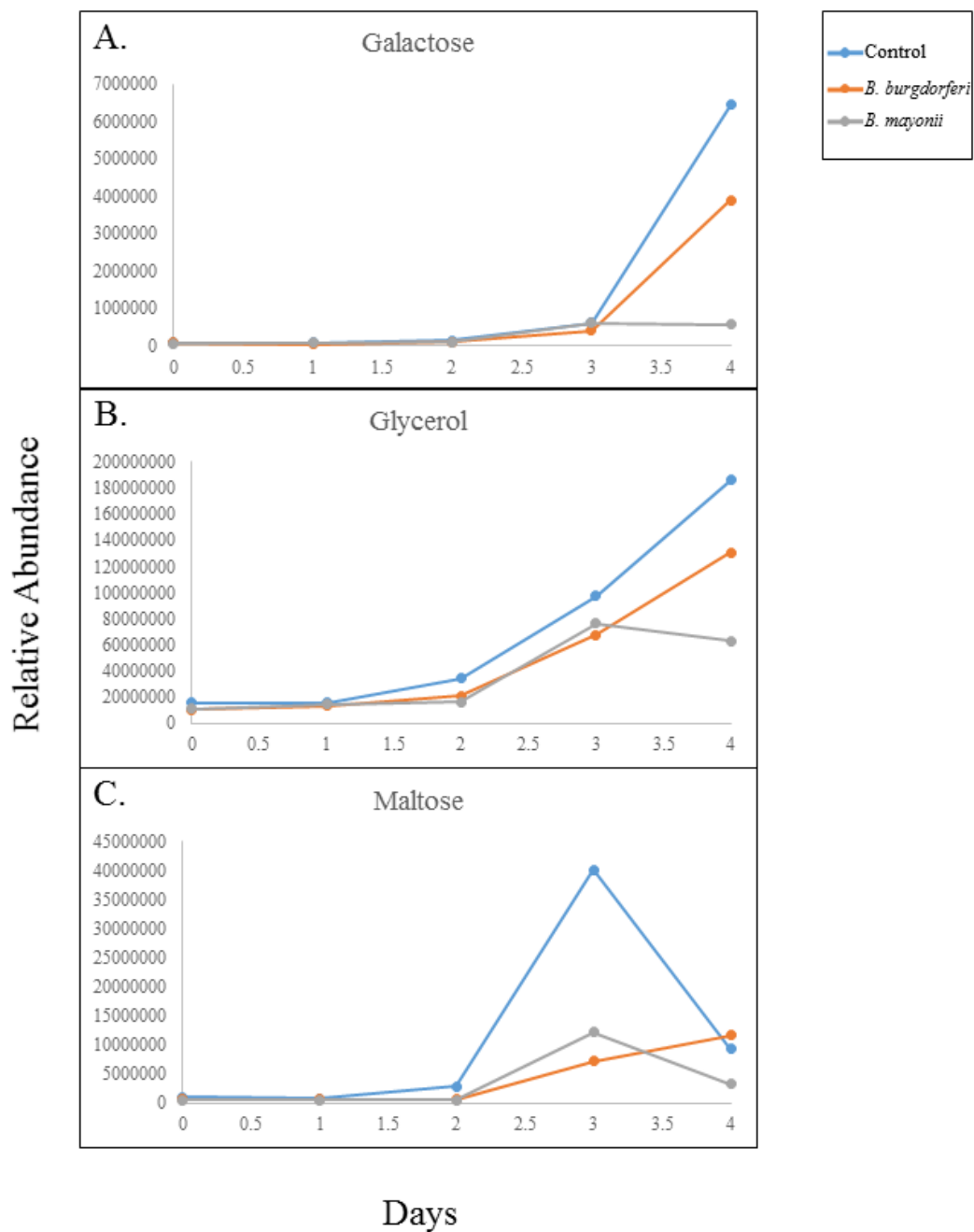
Supplementary Figure 3 Part 3: Amino Acids Box and Whisker Plots (3 of 3) Accumulation over time of statistically significant (ANOVA p≤0.05) amino acids in uninfected (control) *Ixodes scapularis* nymphs versus nymphs infected with the Lyme disease spirochetes *Borrelia burgdorferi* or *Borrelia mayonii*.

Supplementary Figure 4: Carbohydrate Trends Accumulation over time of statistically significant (ANOVA p≤0.05) carbohydrates in uninfected (control) *Ixodes scapularis* nymphs versus nymphs infected with the Lyme disease spirochetes *Borrelia burgdorferi* or *Borrelia mayonii*.
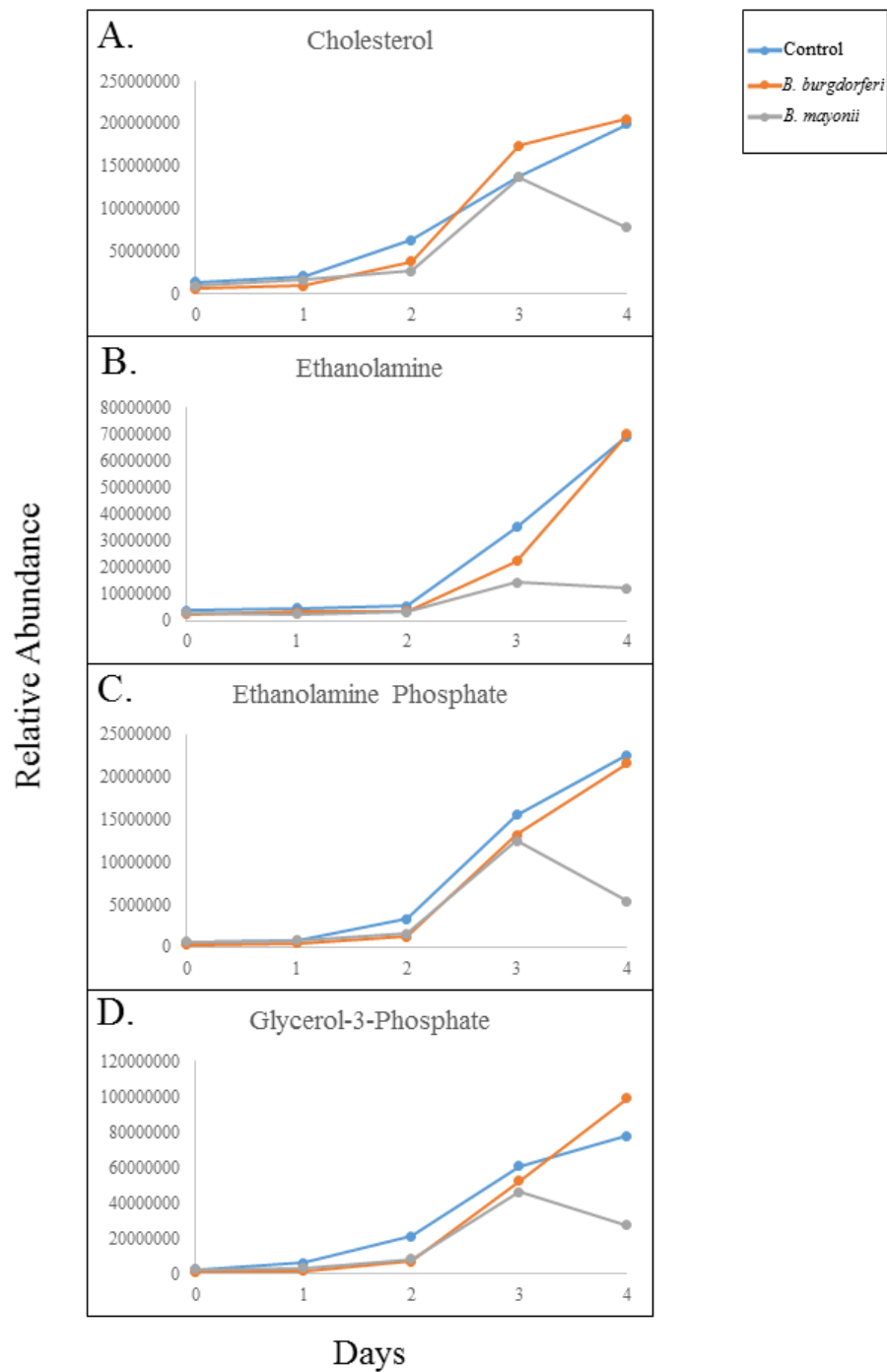
Supplementary Figure 5: Fatty Acid Trends Accumulation over time of statistically significant (ANOVA p≤0.05) lipids in uninfected (control) *Ixodes scapularis* nymphs versus nymphs infected with the Lyme disease spirochetes *Borrelia burgdorferi* or *Borrelia mayonii*.

Supplementary Figure 6: Histogram of Cluster CVs of QC Samples Histogram of the coefficients of variation (CV) for all compounds detected, showing that the majority of ion signals have CV values below 20% in the QC (quality control) samples. QC samples were pooled from all samples in dataset.

histogram of cluster CVs of QC samples
20% quantiles in red on top axis