

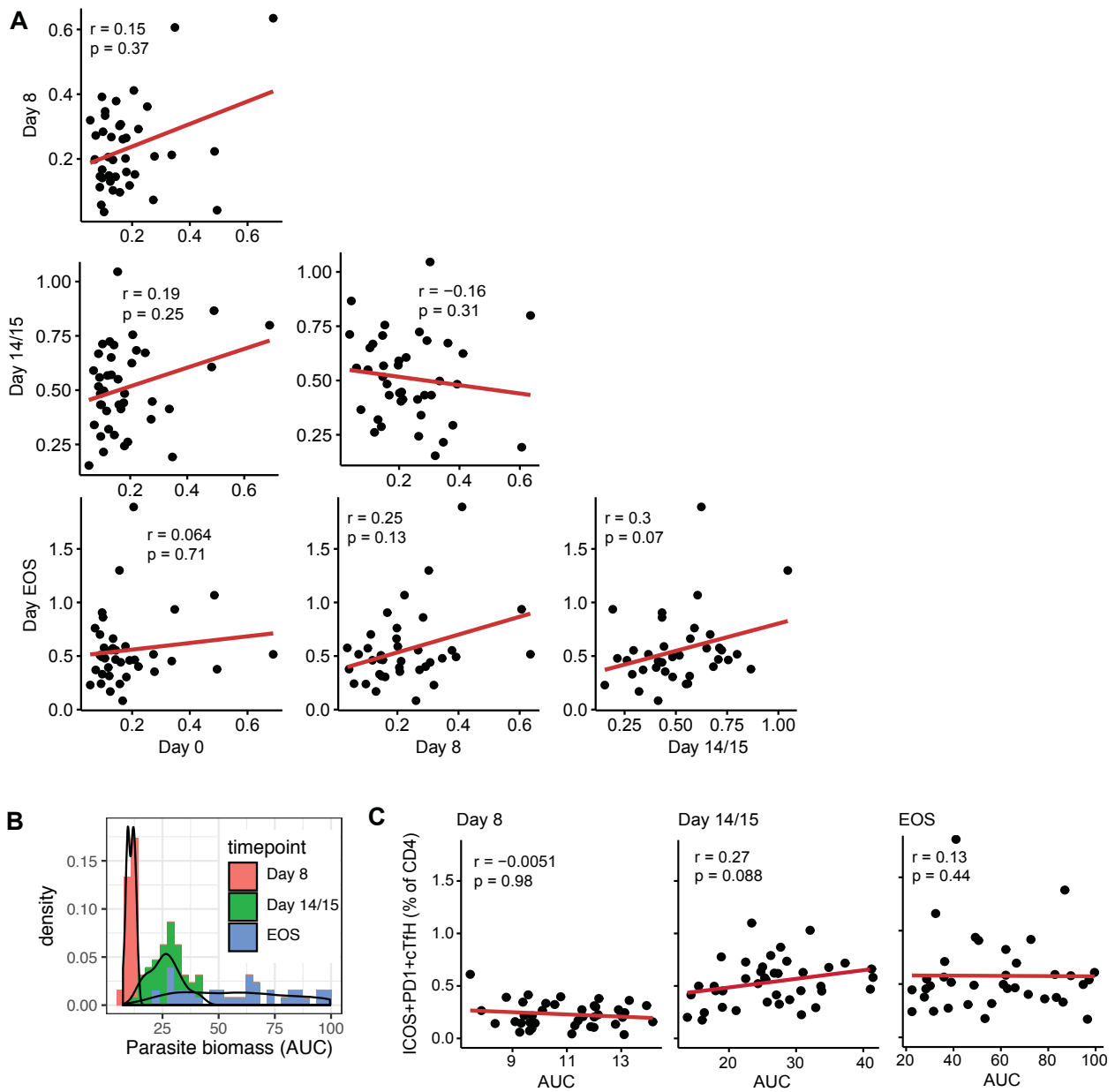
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Supplemental Information

**Th2-like T Follicular Helper Cells Promote
Functional Antibody Production
during *Plasmodium falciparum* Infection**

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Supplementary Figure S1

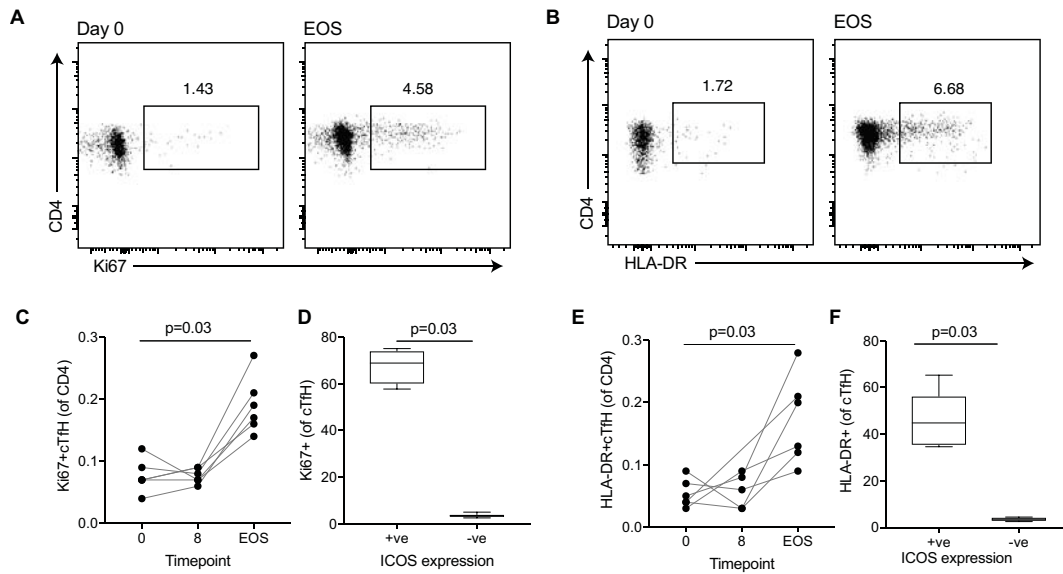


Supplementary Figure S1 Correlations between ICOS+ cTfh cells and parasite biomass

A) Correlations between ICOS+ cTfh (PD1+CXCR5+, data is % of CD4 T cells) at each time point (day 0, 8, 14/15 and end-of-study). Spearman's correlations coefficients and p values indicated. **B)** Parasite biomass was calculated as Area Under the growth Curve (AUC) on the \log_{10} scale from inoculation to day 8 (day of treatment), day 14/15 and end-of-study time points from qPCR data. **C)** Correlations between ICOS+ cTfh and parasite density (area under curve, AUC) at each time point.

Related to Figure 2 in the main manuscript.

Supplementary Figure S2

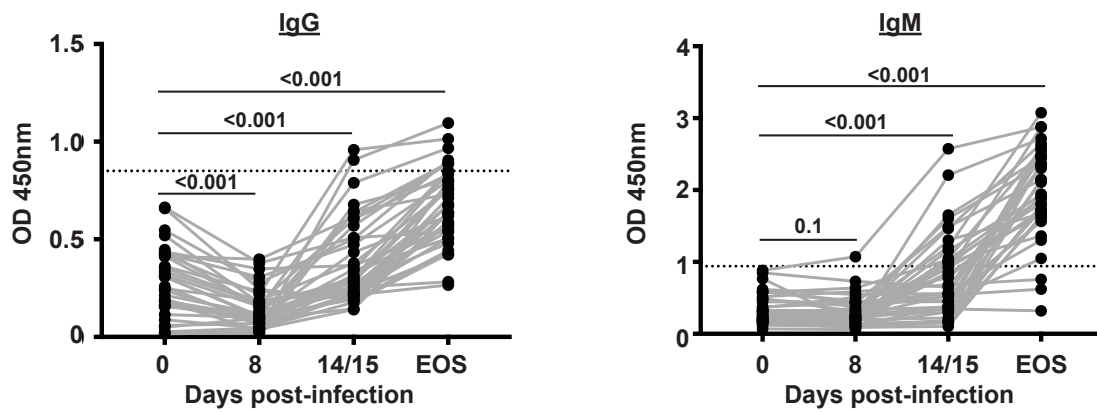


Supplementary Figure S2: Ki67 and HLA-DR expression on cTfh

PBMC samples from a subset of 6 participants were assessed for Ki67 (**A**) and HLA-DR (**B**) expression on cTfh (PD1+CXCR5+) at days 0, 8 and EOS time-points. The frequencies of Ki67+ (**C**) and HLA-DR+ (**E**) PD1+cTfh increased during experimental infection. Expression of Ki67 and HLA-DR was higher on ICOS+ than ICOS- cTfh subsets (**D**, **F**). Wilcoxon signed rank test indicated.

Related to Figure 3 in the main manuscript.

Supplementary Figure 3

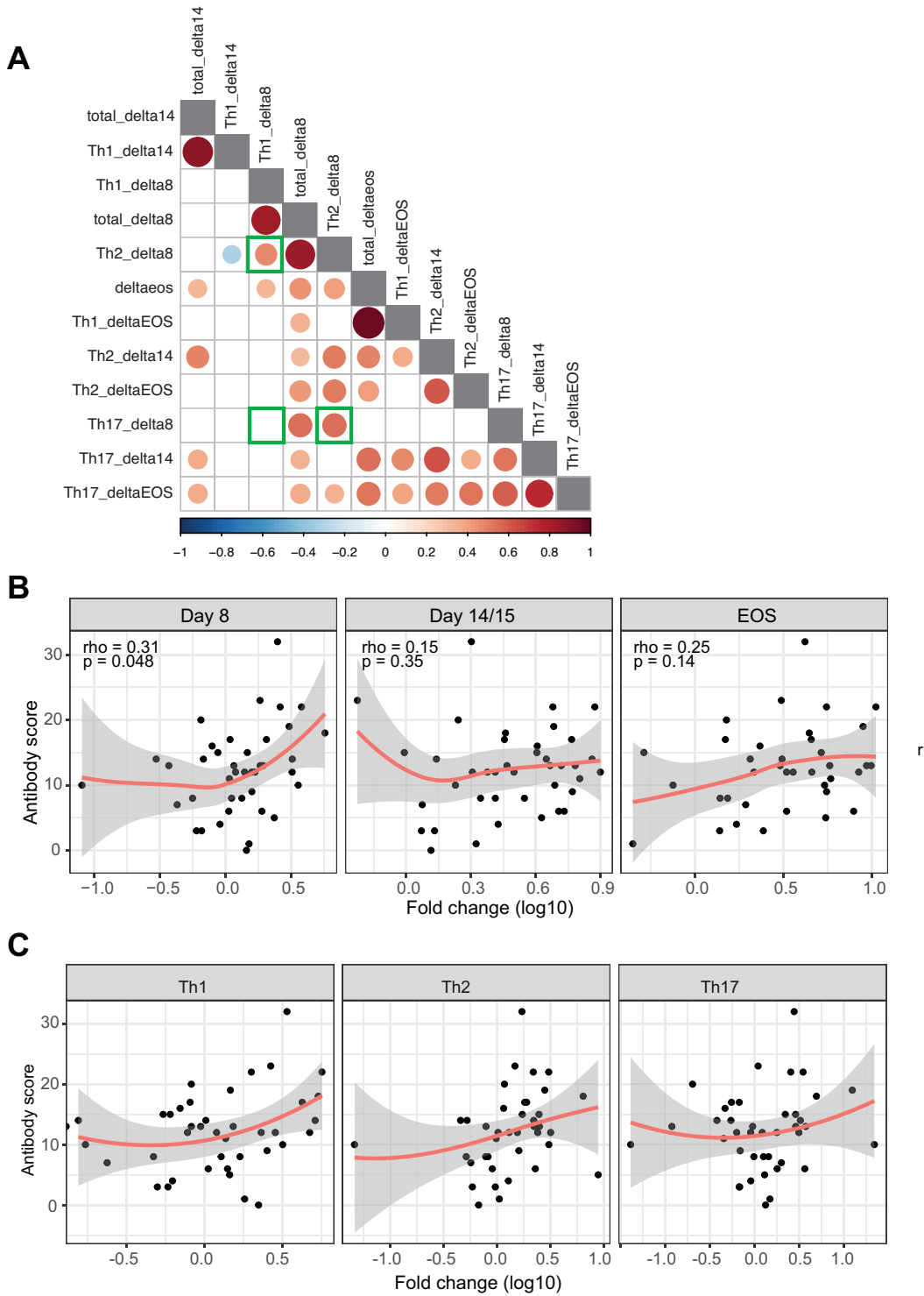


Supplementary Figure S3: Antibody responses to intact 3D7 merozoites increased following experimental infection

Total IgG and IgM levels were measured to intact 3D7 merozoites at all timepoints. Antibody levels are expressed as optical density (OD) values measured at 450nm; dotted line represents the antibody positive threshold calculated as mean + 3SD of day 0 responses; *p* values were calculated using a Wilcoxon signed rank test.

Related to Figure 6 in the main manuscript.

Supplementary Figure S4

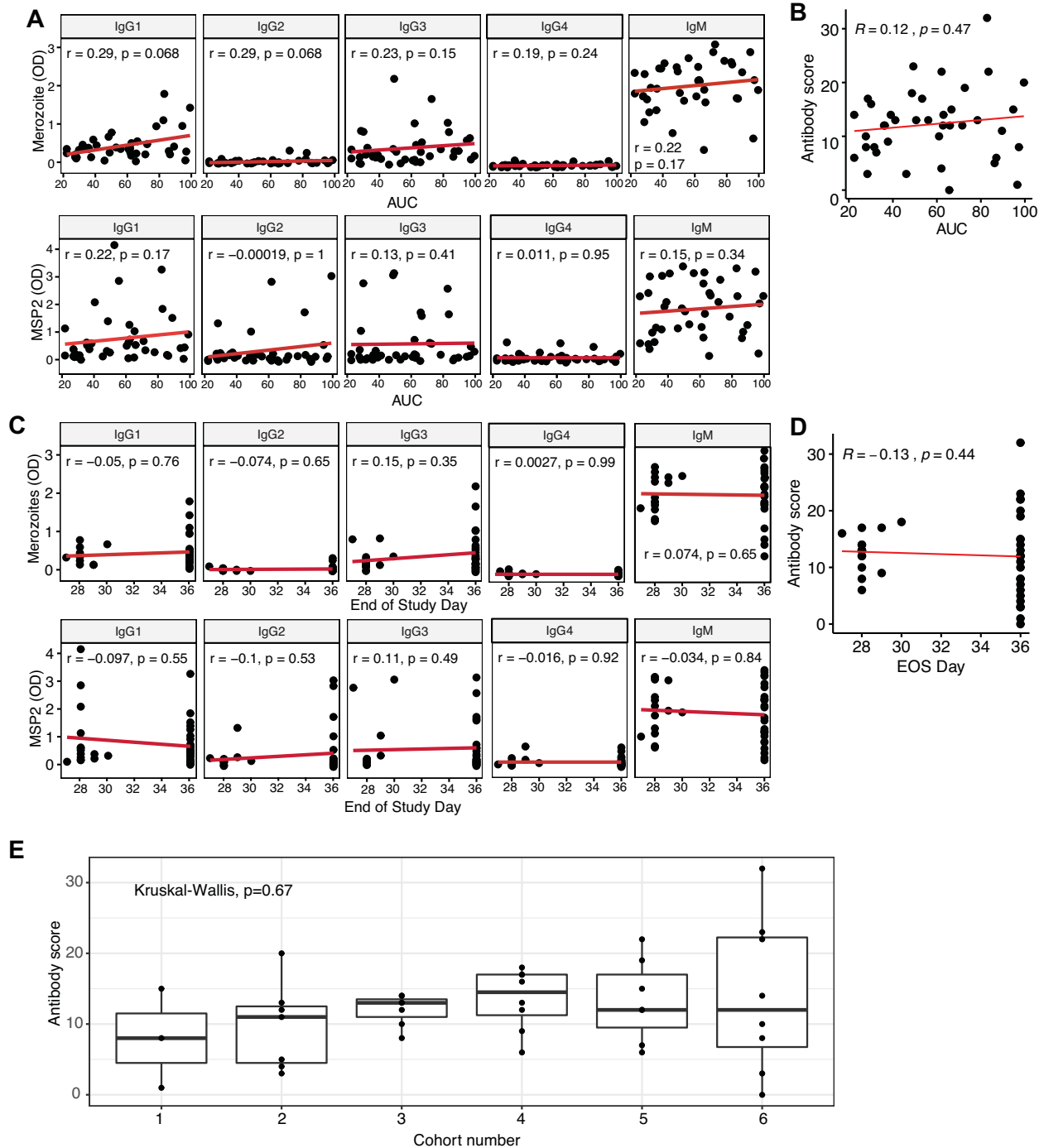


Supplementary Figure S4: Association between antibody score and fold change in cTfh activation

A) Correlation between antibody score and the fold change of total ICOS+ cTfh at day 8, day 14/15 and EOS. **B)** Correlation between antibody score and fold change of ICOS+ cTfh subsets at day 8 following experimental infection. **C)** Correlation between antibody score and fold change of ICOS+ cTfh subsets at day 8 following experimental infection.

Related to Figure 7 in the main manuscript.

Supplementary Figure S5



Supplementary Figure S5 Relationship between antibodies and parasite burden

A) Correlation between individual antibody responses to merozoites and MSP2 with parasite biomass as measured by area under curve at EOS time point. **B)** Correlation between total antibody score with parasite biomass at EOS time point. **C)** Correlation between individual antibody responses to merozoites and MSP2 and EOS day. **D)** Correlation between total antibody score and EOS day. Correlations were evaluated using Spearman's rho. **E)** Antibody score in each infection cohort. Kruskal-Wallis indicated.

Related to Figure 7 in the main manuscript.