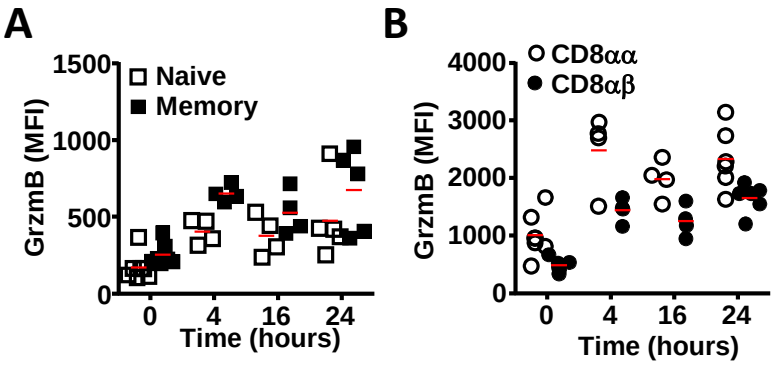
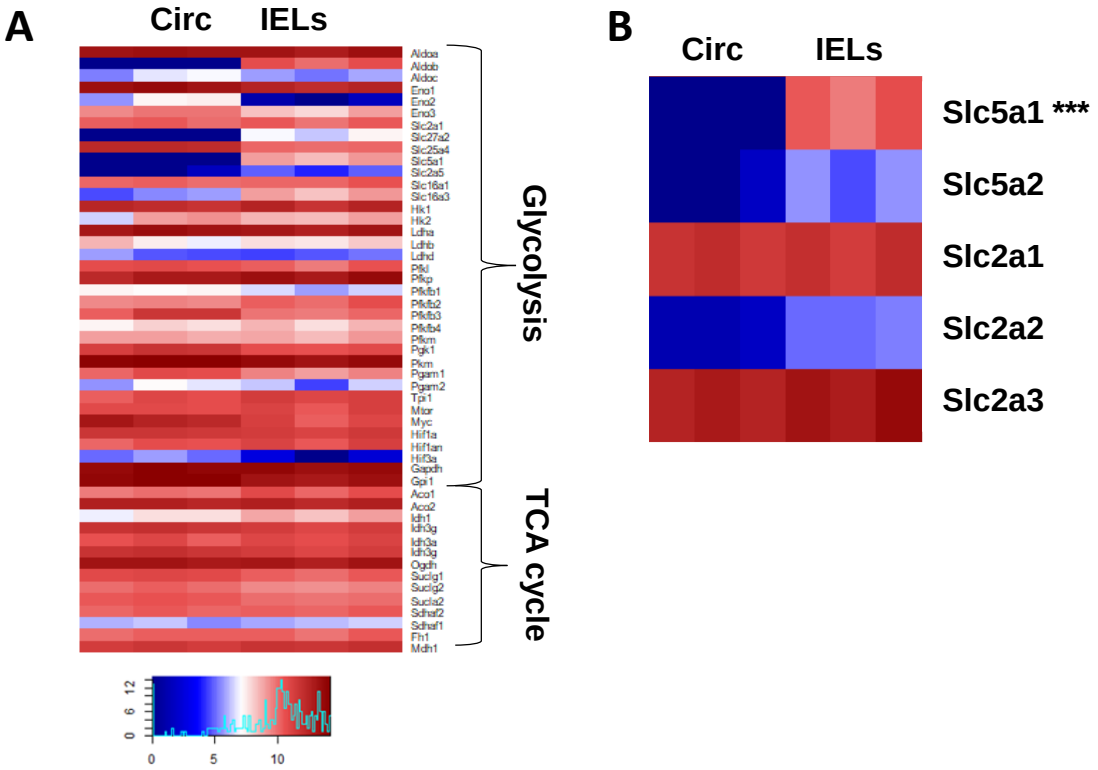
Supplemental Figure 1



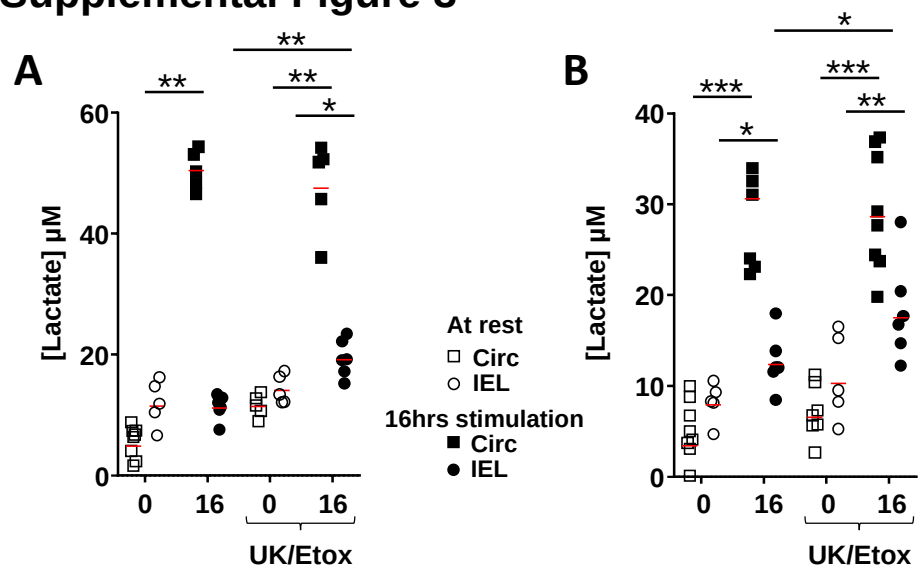
Supplementary Figure 1. Granzyme B presence in CD8memory and CD8naive T from spleen and CD8αβ and CD8αα cells from SI during activation. Flow cytometry intracellular staining for granzyme B in memory and naïve CD8 from spleen (**A**) and in intestinal CD8αβ and CD8αα IELs (**B**) at indicated time points (n=4-6).

Supplemental Figure 2



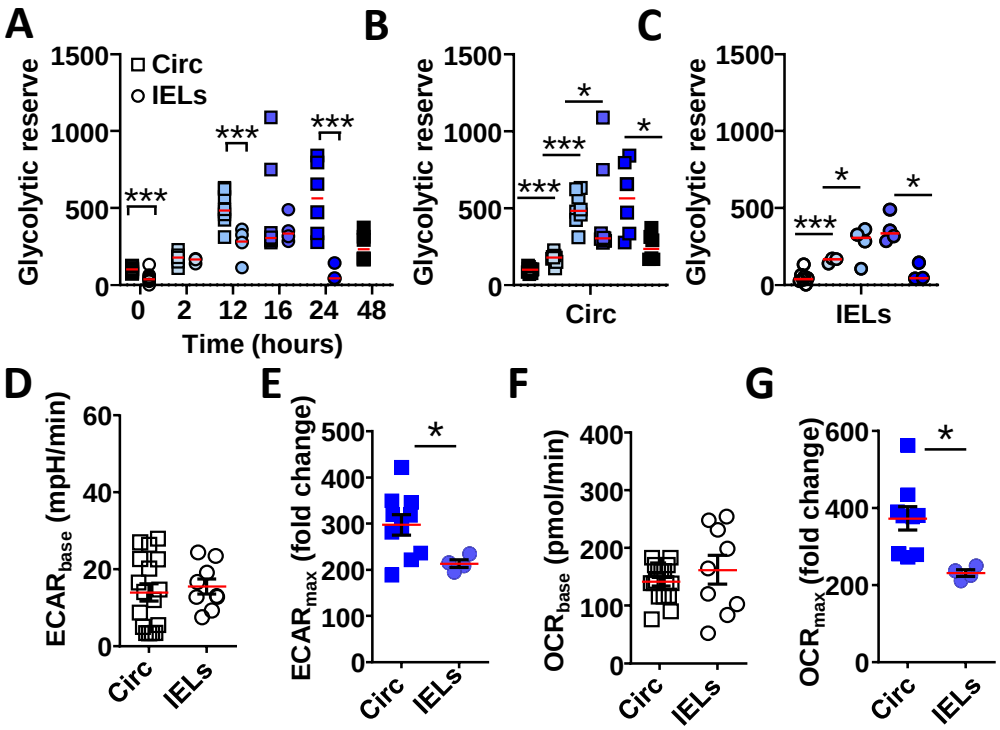
Supplemental Figure 2. mRNA expression levels for glycolysis and TCA cycle in circulating memory CD8 T cells and IELs. Circulating memory $CD8^{+}$ $CD44^{hi}$ T cells from spleen and IELs were flow sorted, and mRNA isolated after which RNA-seq was performed in triplicate (Konjar et al, Sci Immunol 2018). (**A**) Overview of the mRNA expression levels of enzymes involved in glycolysis or OXPHOS (TCA cycle). (**B**) Highlight of glucose transporters indicated, with no differences in Slc2a1, 2a2 and 2a3 mRNA levels, encoding for Gtut1, 2 and 3, but differential higher expression of Slc5a1 ($p=2.5x10^{-22}$), encoding SGLT1.

Supplemental Figure 3



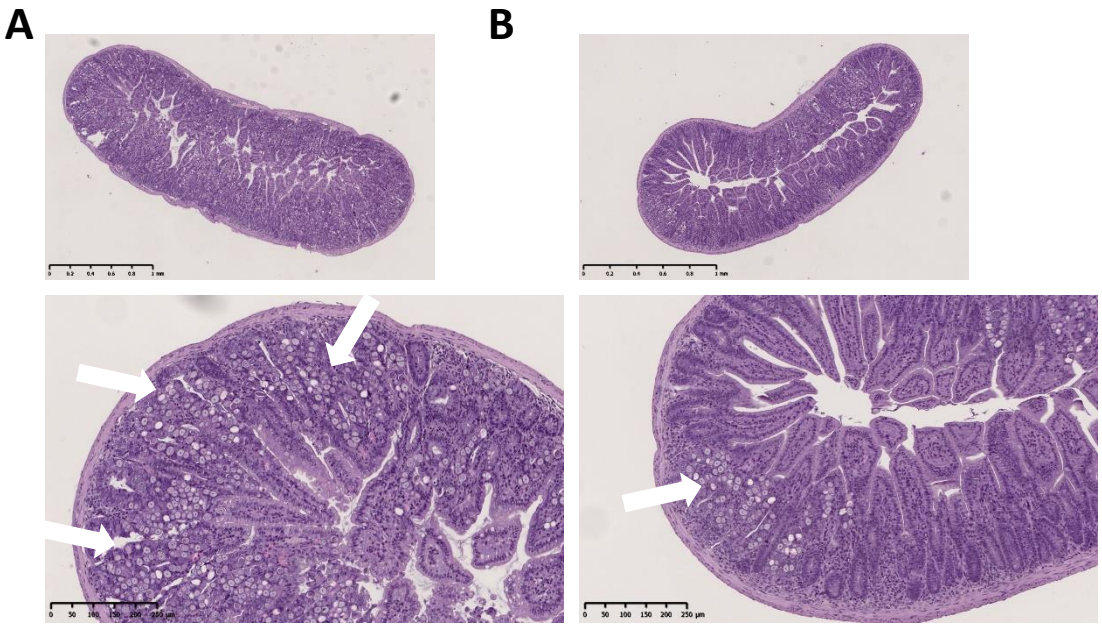
Supplemental Figure 3. Lactate production in circulating CD8⁺ T cells and IELs. Circulating CD8 from spleen and IELs were sorted, seeded in 96-wells plate and **A**) intra- and **B**) extra-cellular lactate production was assessed under steady state (0) or upon 16 hours of activation (16), in the absence or presence of UK5099 and Etomoxir (circulating CD8 T cells: n=5-8, N=3, IELs n=5-6, N=3). Statistical analysis using Mann-Whitney test; *p<0.05; **p<0.01; ***p<0.001.

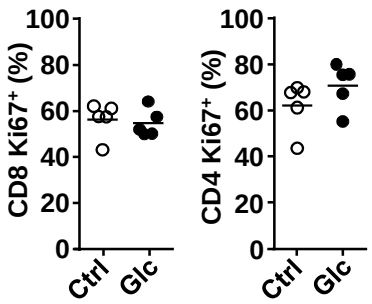
Supplemental Figure 4



Supplemental Figure 4. Glycolytic reserve and basal OCR and ECAR for circulating CD8 T cells and IELs. Circulating CD8 from spleen and IELs were sorted, seeded in 24-wells Seahorse plate and OCR and ECAR levels were assessed. (**A**-C) Glycolytic reserve ($ECAR_{oligmycin} - ECAR_{2DG}$) of circulating CD8 T cells (squares, B) and IELs (circles, C) at indicated time points after activation. Extracellular flux assessment of CD8 T cells from spleen (squares) and IELs from small intestine (circles) basal ECAR (**D**) max ECAR (normalized to basal ECAR,) (**E**), basal OCR (**F**) and max OCR (normalized to basal OCR) (**G**) Base values, Circ n=17, IELs n=9, Max values Circ n=10, IELs n=4). Statistical analysis using Mann-Whitney test; *p<0.05; ***p<0.001

Supplemental Figure 5





Supplemental Figure 5. High glucose enhances intestinal pathogen clearance. C57BL6/J mice were provided with (filled) or not (open) with 10% glucose water for 3 days prior to challenge via oral gavage with 1000 *Eimeria vermiformis* oocysts. (**A-B**) Histological sections of H&E staining from small intestine of control (A) mice and additional glucose fed mice (B) at day 10 of *Eimeria vermiformis* infection. Shown are overview and zoom from a representative mouse. Scale bar is 1mm in top panels and 250 µm in enlargements, white arrows denote areas with oocysts, (**C**) Lamina propria T cells, $CD8^+$ and $CD4^+$ were assess for Ki67 staining by flow cytometry. Show a representative experiment, n=5, from two.