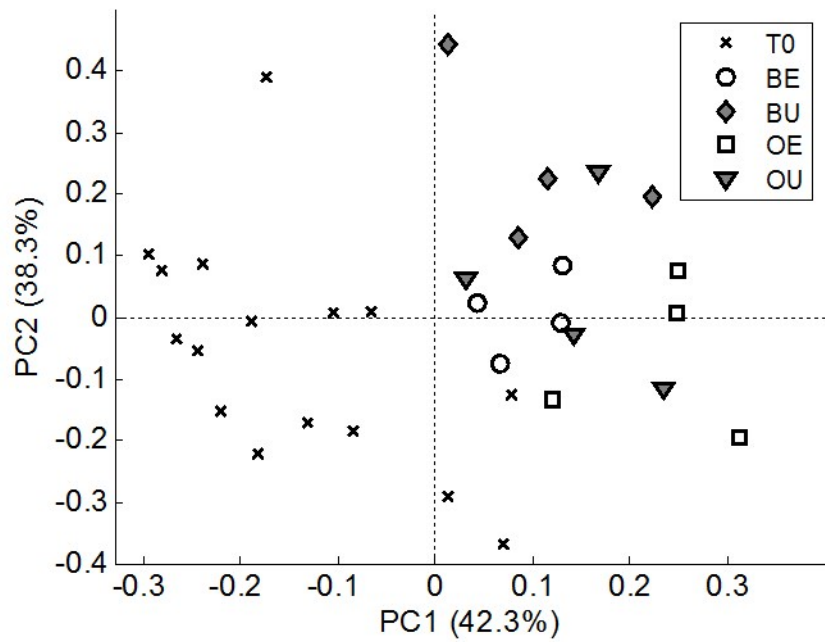


## Supporting Information Available

**S1. Blood metabolite data.** The blood metabolite data previously published by Hole *et al.*<sup>39</sup> was also analyzed to see if there was a correlation between these data and the microbiota data presented here. No correlation was found and these results are summarized in this supplementary file.

**S2. OTU table.** For each OTU an ANOVA model with grain effect, treatment effect and the interaction between grain and treatment was estimated. The table (Excel) summarizes the data and the ANOVA results for each term in the model. The content of the columns are: OTUid; M-B: Mean (standard deviation) of animals given barley (mean of BU, BE); M-O: Mean (standard deviation) of animals given oats (mean of OU, OE); p-grn: Pvalue of the grain effect; M-E: Mean (standard deviation) of animals given extruded grain in diet (mean of OE, BE); M-U: Mean(standard deviation) of animals given untreated grain in diet (mean of OU, BU); p-trt: P value of the treatment effect; M-BE: Mean (standard deviation) of all animals with BE diet; M-BU: Mean (standard deviation) of animals with BU diet; M-OE: Mean (standard deviation) of animals with OE diet; M-OU: Mean (standard deviation) of animals with OU diet; p-int: P values of the interaction effect.



**Figure S3.** PCA score plot for SCFA data (PC1 and PC2). PC1 separates t0 and t3. More variation was observed in start than end.