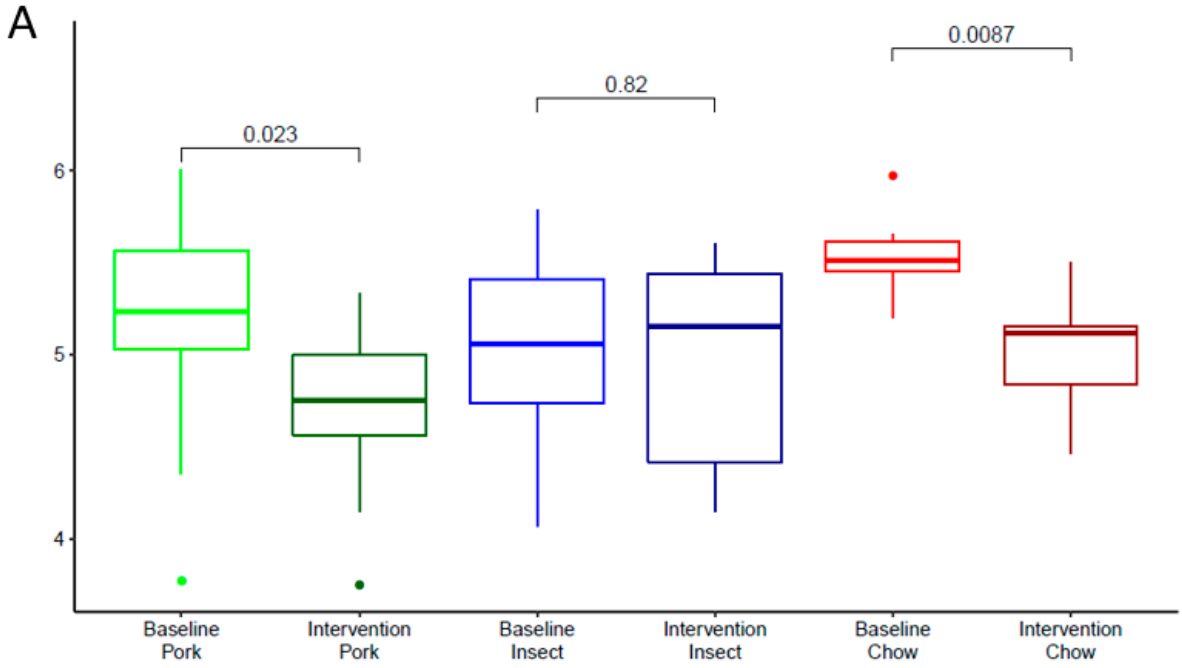
Supplementary material

Table S1: Formulation of sausages diets. *Ingredients added to common sausage emulsion of pork meat, pork fat and water*

	Pork sausage	**Insect-substituted pork sausage**
Sunflower oil [mL/kg]	62.4	65.8
NaCl [g/kg]	11.2	11.8
Phosphor [g/kg]	4.7	4.9
$NaNO_2$ [g/kg]	7.5	7.9
AIN76 mineral mix (TD79055) [g/kg]	18.7	19.7
AIN76 vitamin mix (CA40077) [g/kg]	5.9	6.2
Insect protein isolate [g/kg]	-	131.6

A



B

Shannon index	
	H'
Baseline pork - intervention pork	0.023
Baseline insect - intervention insect	0.82
Baseline chow - intervention chow	0.0087
Intervention pork - intervention insect	0.25
Intervention pork - intervention chow	0.12
Intervention insect intervention chow	0.96

Figure S1: Alfa diversity of the gut microbiota composition at baseline and after the tree intervention diets. *The Shannon index at baseline and after diet intervention (4 weeks) with either pork sausage diet, insect-substituted pork diet or chow diet (A). Statistical values of Shannon index for all comparisons (B).*

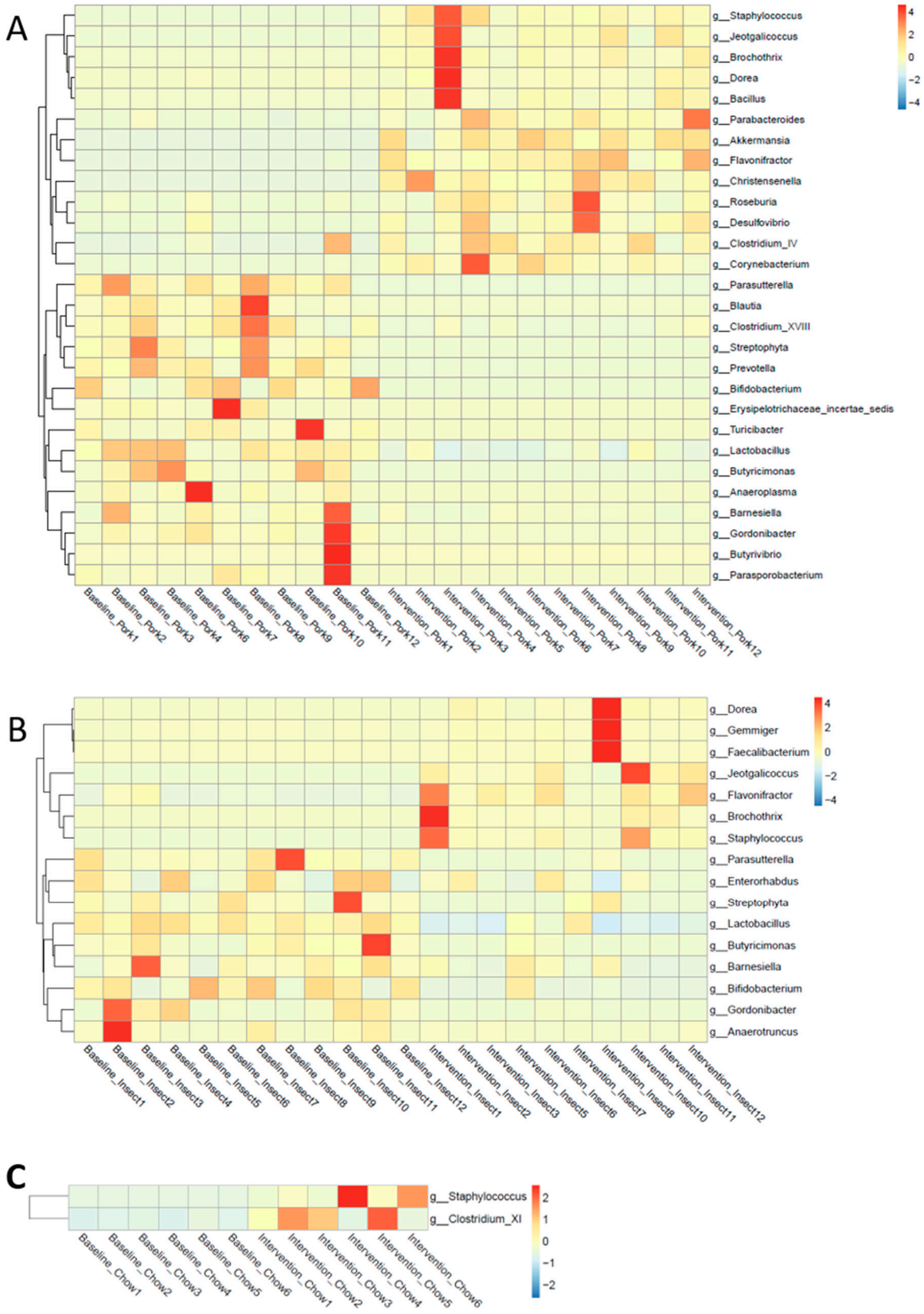


***Figure S2:* Change in abundance of different bacterial genera in the gut microbiota after diet intervention.** *The abundance at genus level are shown before (baseline) and after the different diet interventions (Intervention) with (A) pork sausage (pork), (B) insect-supplemented pork sausage (insect) or (C) chow diet (chow).*

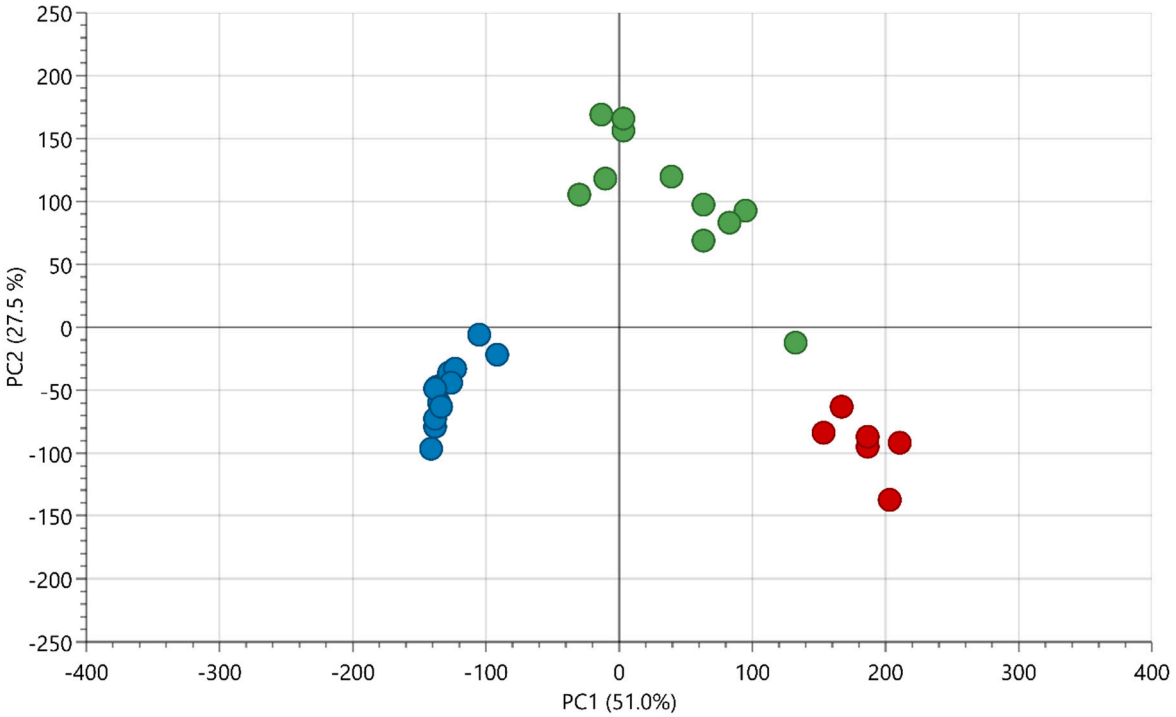


Figure S3: Score plot of principal component analysis of stomach content. *The first two principal components of rats on chow diet (red), pork sausage diet (blue) or insect-substituted pork sausage diet (green). The first principal component(PC) explaining 51 % of the total variance separates the groups and by also taking the second component, explaining 27.5 % of the variance, into account a clear separation is observed between the three groups.*

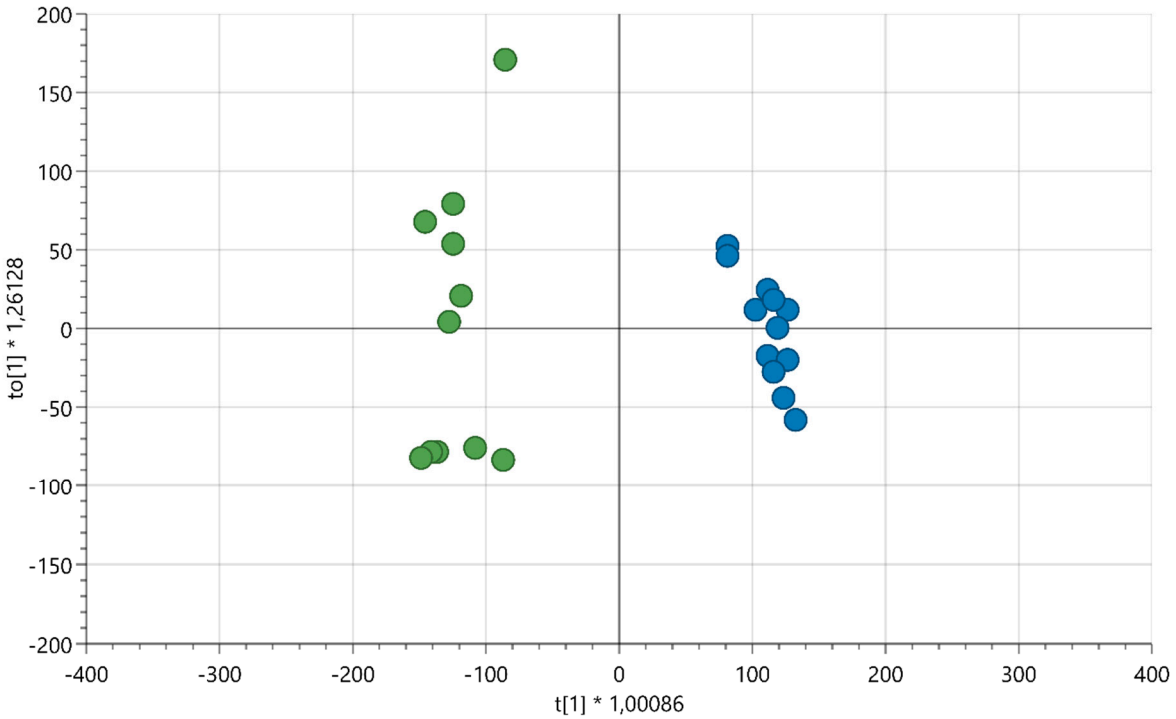


Figure S4: Score plot of *OPLS-DA* ***of stomach content of rats on insect-substituted pork sausage diet (green) versus pork sausage diet (blue).*** *Q^2=0.96.*

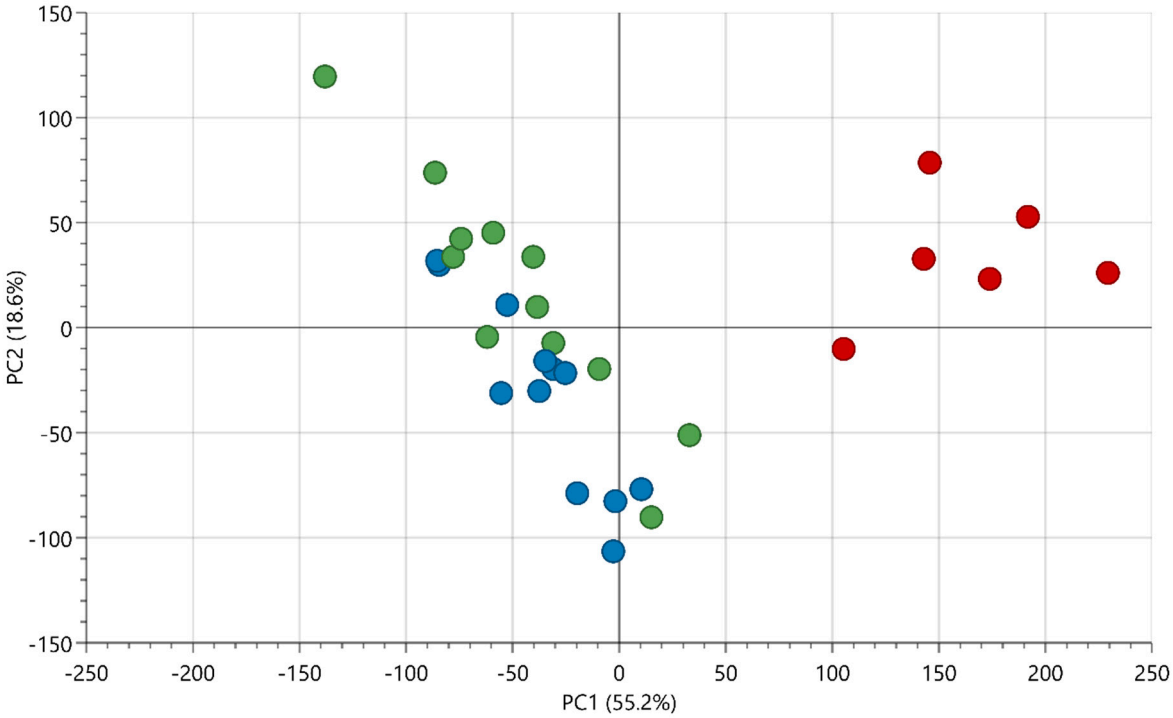


Figure S5: Score plot of principal component analysis of small intestinal content. *The first two of three principal components of rats on chow diet (red), pork sausage diet (green) or insect-substituted pork sausage diet (blue). The first principal component (PC) (55.2 %) separates the chow group from the others while the pork and insect diet groups are separated along both PC1 and PC2 (18.6 %).*

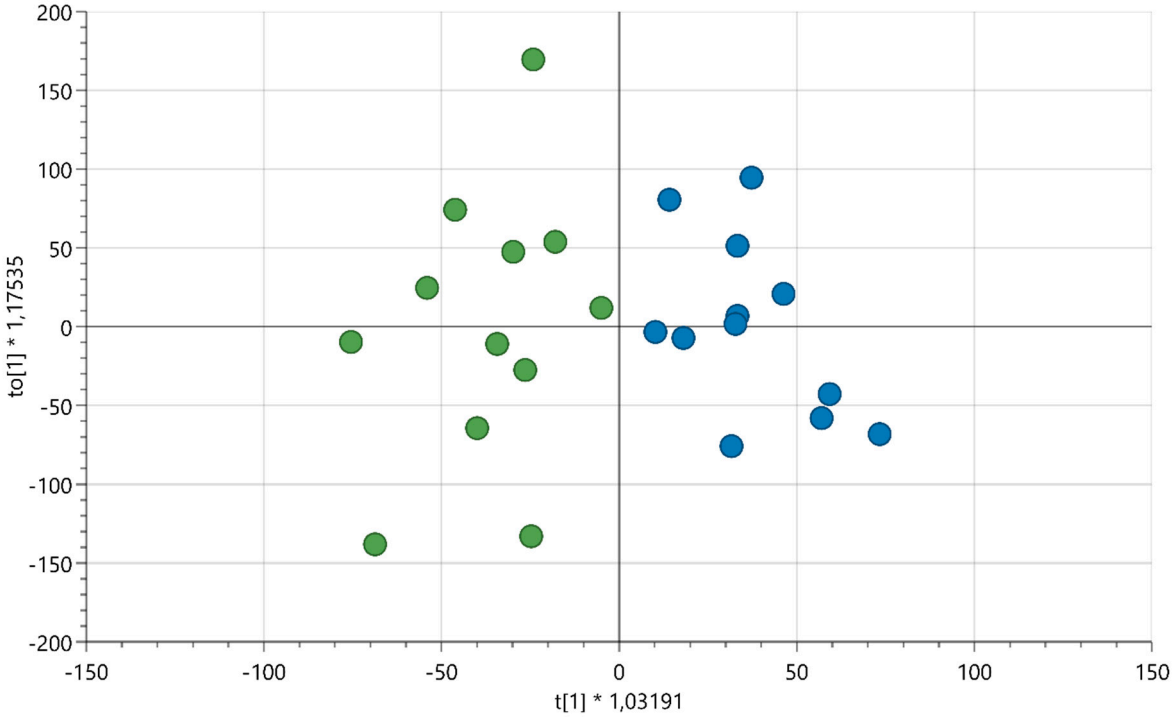


Figure S6: Score plot of orthogonal partial least squares discriminant analysis of small intestinal content of rats on pork diet (green) versus insect-substituted pork sausage diet (blue). *Q^2=0.67.*

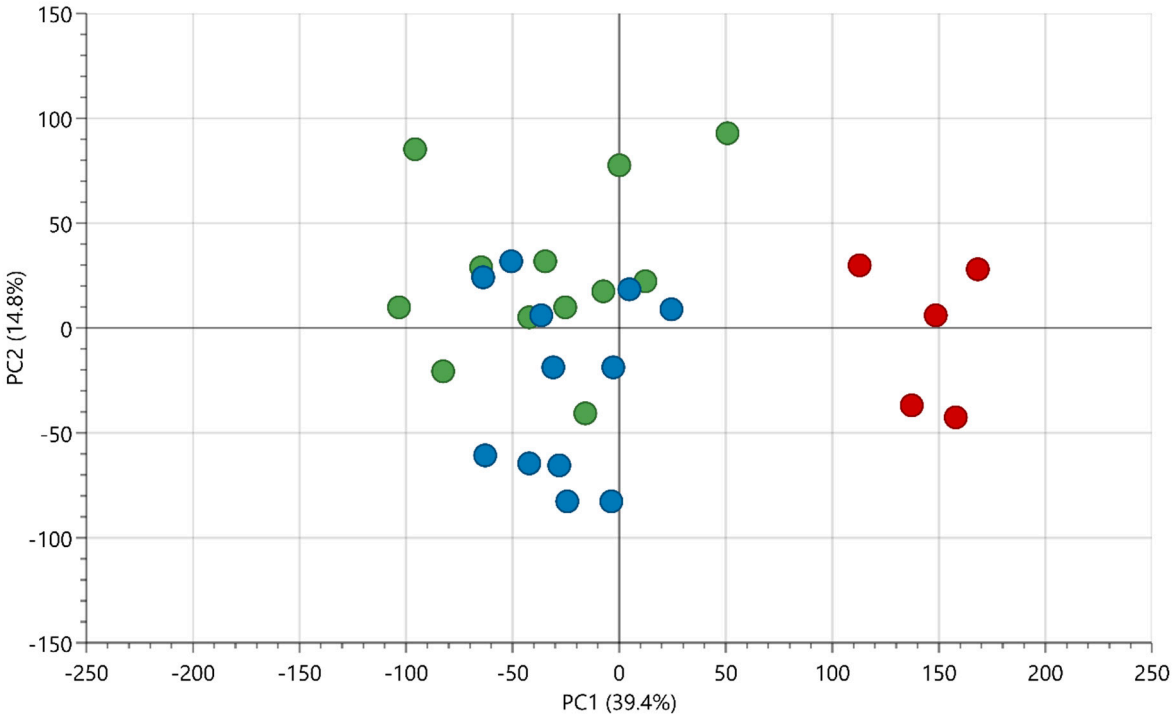


Figure S7: Score plot of principal component analysis of colon content. *Score plot of principal component analysis with 7 principal components displaying the two first components of colon content of rats on chow diet (red), pork sausage diet (green) or insect-substituted pork sausage diet (blue). The first principal component (PC) (39.4 %) separates the chow samples from the other groups while PC2 (14.8 %) separates the pork from the insect group.*

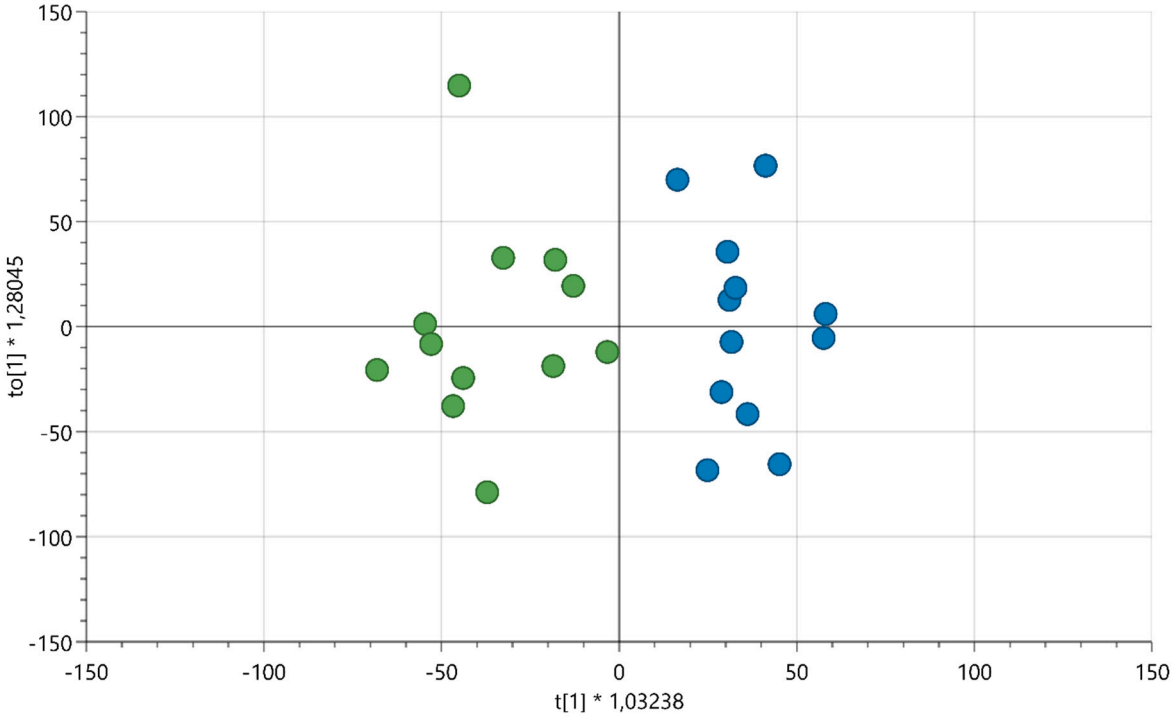


***Figure S8: Score plot of** OPLS-DA **of colon content of rats on pork diet (green) versus insect-substituted pork sausage diet (blue).** Q^2=0.59.*