Structural modulation of the gut microbiota and the relationship with body weight: compared evaluation of liraglutide and saxagliptin treatment

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Supplementary Information

Supplementary figure legends

Supplementary Figure S1. The six groups: NC, normal glucose control; NS, normal glucose + diet premixed with saxagliptin; NL, normal glucose + daily subcutaneous injection of liraglutide; HC, hyperglycaemia control; HS, hyperglycaemia + diet premixed with saxagliptin; HL, hyperglycaemia + daily subcutaneous injection of liraglutide.

Supplementary Figure S2. The rarefaction curves (A) and Shannon-Wiener curves (B) of all of the samples.

Supplementary Figure S3. The cladogram (A) and the key phylotypes (B) of gut microbiota that changed in response to saxagliptin treatment. Differences are represented in the colour of the most abundant group. The left histogram shows the lineages of LDA values of 3.8 or higher as determined by LEfSe. The right heat map shows the relative abundance ($\log_{10}$ transformation) of OTUs.

Supplementary Figure S4. The cladogram (A) and key phylotypes (B) of gut microbiota that changed in response to a different glucose level. Differences are represented in the colour of the most abundant group. The left histogram shows the lineages of LDA values of 3.8 or higher as determined by LEfSe. The right heat map shows the relative abundance ($\log_{10}$ transformation) of OTUs.
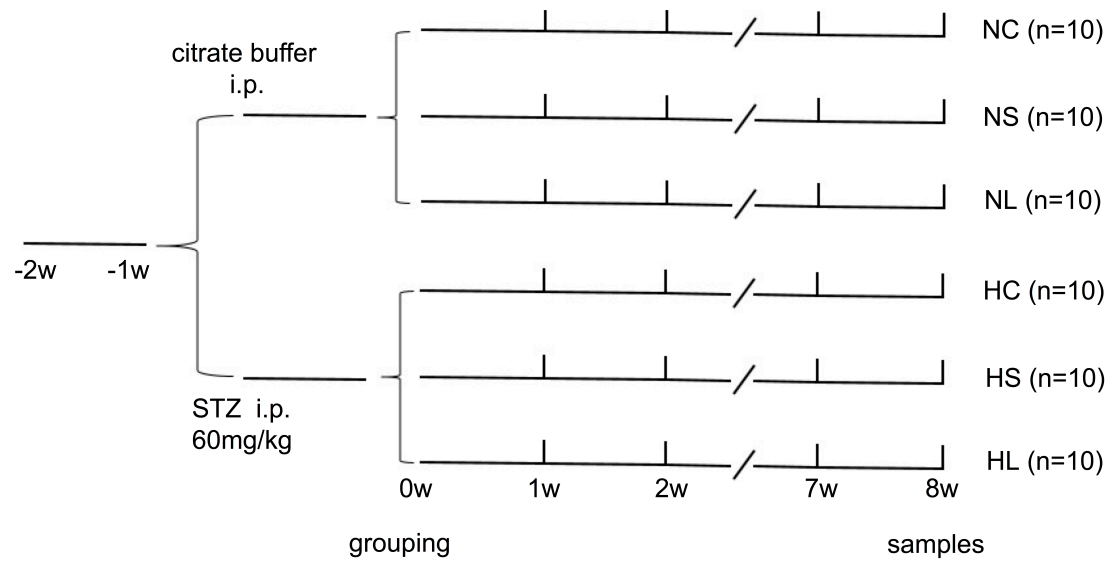
Supplementary Tables

Supplementary Table S1 Data on body weight, food intake, random blood glucose and blood lipid in

six groups.

	Normal glucose			Transit hyperglycemia		
	control (n=9)	Saxagliptin (n=10)	Liraglutide (n=10)	Control (n=10)	Saxagliptin (n=9)	Liraglutide (n=9)
Body weight (g)						
Week 0	27.10±0.23	27.60 ± 0.40	27.20 ± 0.36	26.50±0.52	26.40±0.40	26.10±0.41*
Week 8	31.00±0.53	29.80 ± 0.77	29.30±0.34*	29.80±0.53	31.00±0.44	28.10±0.46**
Mean weight	29.19±0.25	29.00±0.58	28.00±0.37*	28.32±0.43	28.68±0.34	26.60±0.33$^{**\#\#}$
Weight gain	3.89±0.61	2.20±0.70	2.10±0.48*	3.30±0.62	4.44±0.50	1.70±0.26$^{*\#}$
Foodintake (g/w)						
Week 1	33.60±0.32	26.56±2.56	18.96±1.20*	34.64±0.24	30.40±3.68	15.92±0.88*
Week 8	31.44±1.36	30.16±2.96	26.72±0.40	27.68±0.48	29.04±6.16	24.08±3.12
Mean intake	32.42±0.57	26.07±0.75***	24.36±0.85***	30.38±0.73*	28.14±1.04**	20.11±0.80***
Random blood glucose (mmol/L)						
Week 0	7.41±0.17	8.09±0.32	7.56±0.28	8.94±0.32***	10.00±0.24***	8.10±0.22*
Week 1	7.22±0.26	7.72±0.12	6.10±0.29*	8.07±0.22*	7.87±0.31	7.00±0.26
Week 2	7.76±0.26	7.60±0.28	6.72±0.24*	9.08±0.32*	9.25±0.36*	7.05±0.25
Week 3	6.80±0.27	6.68±0.56	6.64±0.54	7.67±0.43	7.81±0.37	6.74±0.15
Week 8	7.33±0.25	6.96±0.13	6.24±0.29*	7.43±0.19	7.05±0.32	6.48±0.22
Mean level	7.43±0.15	7.43±0.15	6.78±0.13*	7.80±0.26	7.96±0.20*	6.61±0.15$^{**\#\#}$
Lipid (mmol/L)						
TG	2.58±0.13	2.97±0.10*	2.99±0.15	3.04±0.09*	3.16±0.12**	3.32±0.11**
Total CHO	13.34±0.78	13.77±0.67	13.49±0.83	12.14±0.70	14.15±0.72	14.34±0.53
LPS (U/L)	28.82±1.94	26.01±1.90	31.86±1.80	23.92±1.33	25.00±2.69	26.89±1.75

Data were presented as mean ± SE. $*p < 0.05$, $**p < 0.01$, $***p < 0.001$ *vs.* NC. ＃$p < 0.05$, ＃＃$p < 0.01$, *vs.* HC.
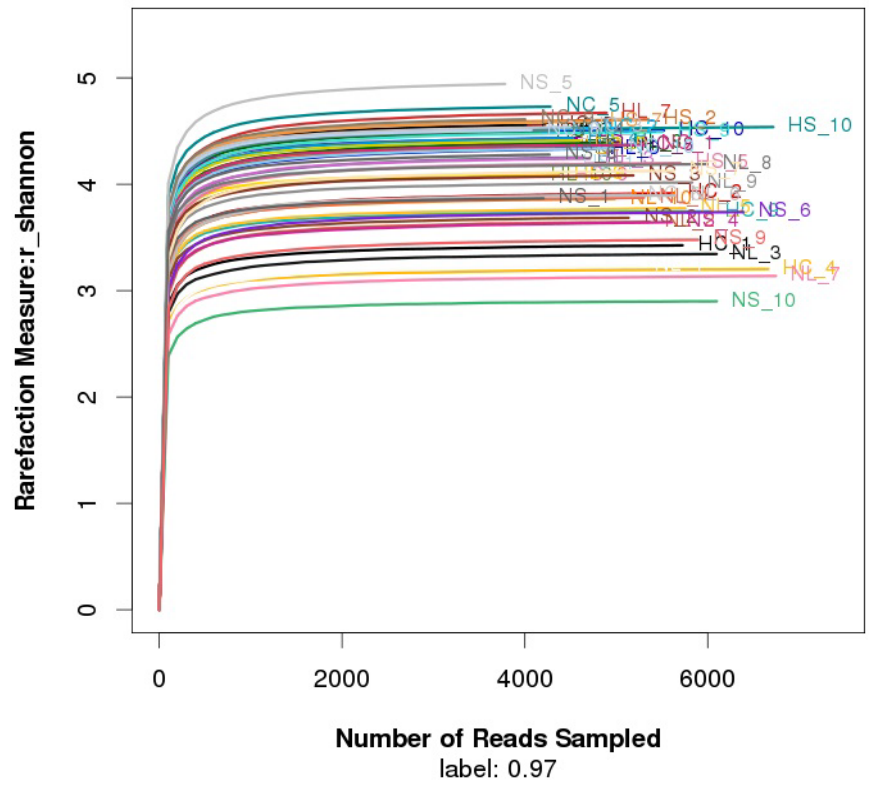
Supplementary Figures

Supplementary Figure S1. The six groups.
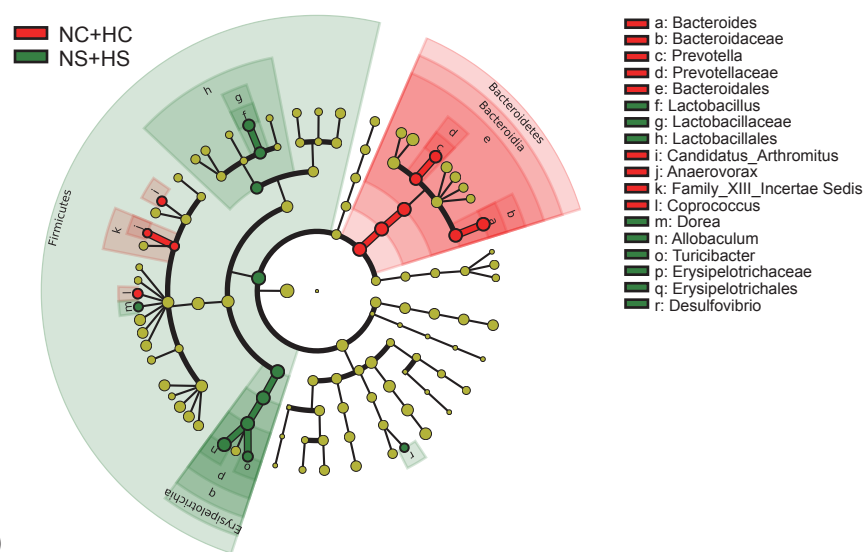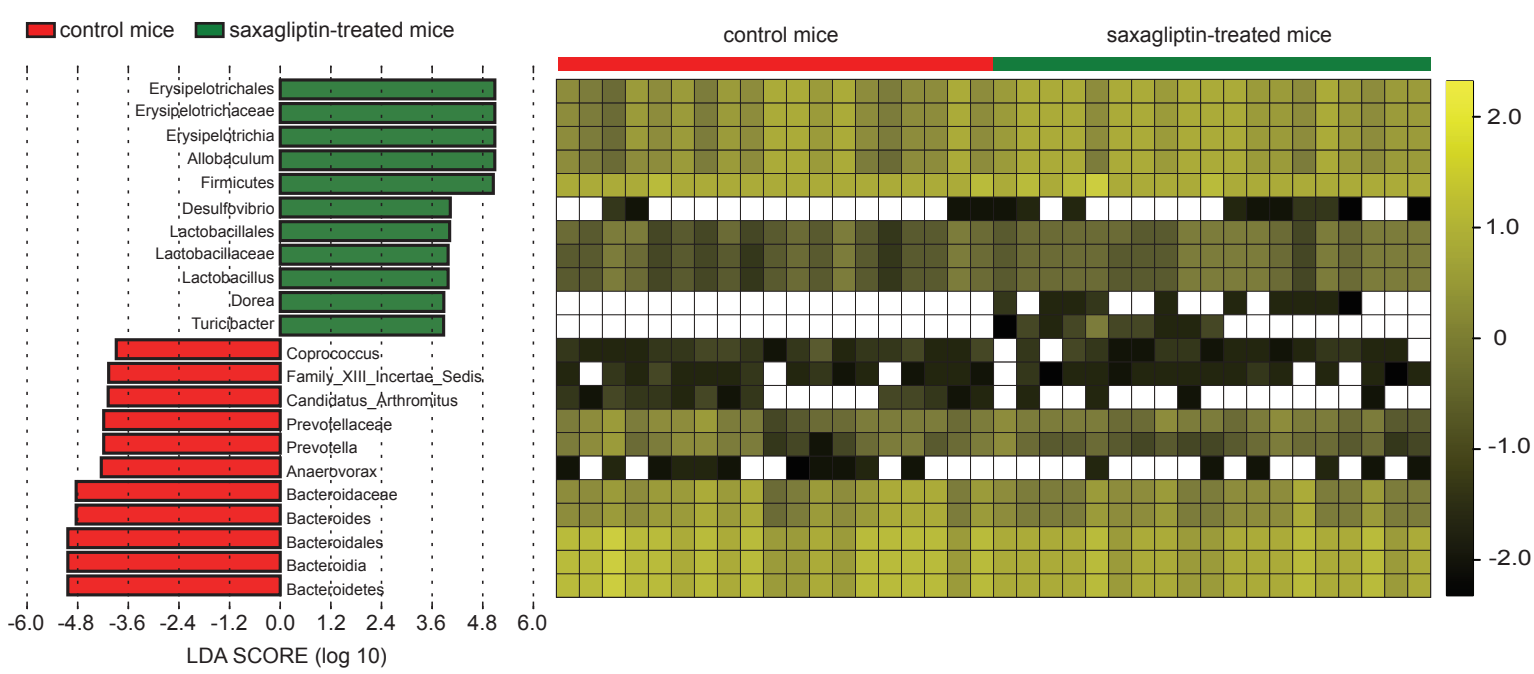
(A)

(B)

Supplementary Figure S2. The rarefaction curves (A) and Shannon-Wiener curves (B) of all of the samples.

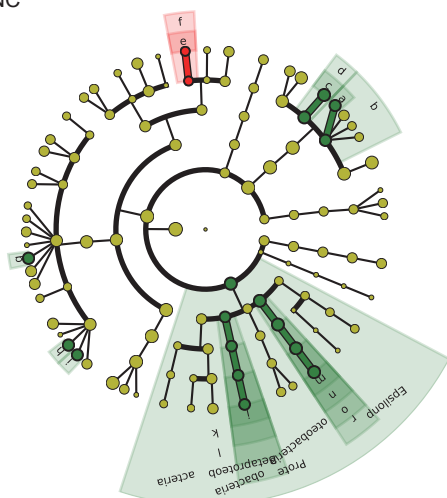**Supplementary Figure S3.** The cladogram (A) and the key phylotypes (B) of gut microbiota that changed in response to saxagliptin treatment.

(A)

(B)
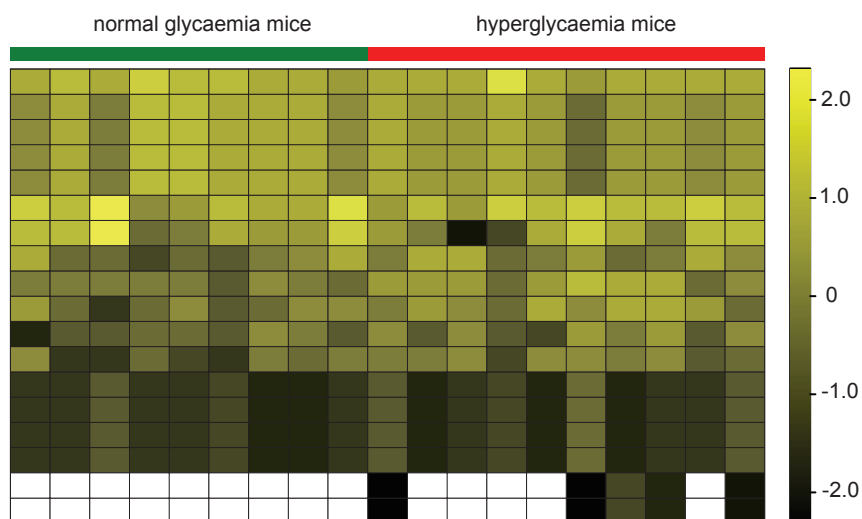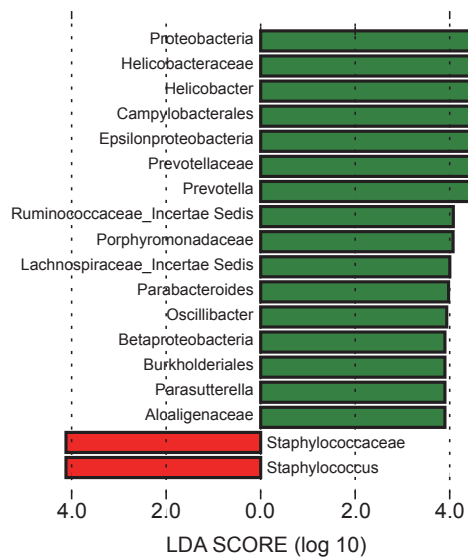

Supplementary Figure S4. The cladogram (A) and the key phylotypes (B) of gut microbiota that changed in response to a different glucose level.