Lactobacillus casei reduces susceptibility to type 2 diabetes via microbiota-mediated body chloride ion influx

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Supplemental Tables

Table S1 Primers for amplifying target intestinal bacteria

Bacterial Target	Primer	Sequence (5'-3')	Reference
C. scindens	scindF	GCAACCTGCCTGCACT	
	scindR	ACCGAATGGCCTTGCCA	1
C. sordellii	sordF	TCGAGCGACCTTCGG	
	sordR	CACCACCTGTCAC	
C. coccoides–E. rectale group	CEF	CGGTACCTGACTAAGAAGC	2
	CER	AGTTTCATTCTTGCGAACG	
E. rectale	RectaleF	CGGTACCTGACTAAGAAGC	3
	RectaleR	CCTAGTATTCATCGTTTACGGCGTG	
Lactobacillus	Lac-F	AGCAGTAGGGAATCTTCCA	
	Lac-R	CACCGCTACACATGGAG	
Bifidobacterium	Bifid-F	CTCCTGGAAACGGGTGG	4
	Bifid-R	GGTGTTCTTCCCGATATCTACA	
Clostridium cluster Ⅳ	C4F	TACCHRAGGAGGAAGCCAC	
	C4R	GTTCTTCCTAATCTCTACGCAT	

19 Table S2 Primer sequences for real-time PCR

Gene	Primer	Sequence (5'-3')	Reference
18S	18SF	TAAGTCCCTGCCCTTTGTACACA	5
	18SR	ATCCGAGGGCCTCACTAAAC	
ClC1	ClC1F	TGTGGAACGCTCAGAACTGCAGTC	6
	ClC1R	TCTAGTGCCAAGACACCTCTGAGC	
ClC-2	ClC-2F	GCAGTGATTGTCTTCGAGCTCACCGG	7
	ClC-2R	CCAGCTCAGGCAGGTAGGGCAGCT	
ClC-3	ClC-3F	TTGCCTACTATCACCACGAC	8
	ClC-3R	GCATCTCCAACCCATTTACT	
ClC4	ClC4F	GAGACTCGGAGCGTCTCATCGG	9
	ClC4R	CTGTTGGCAGGCAGCTCAGGAG	
ClC5	ClC5F	TGCTGACTGTCCTTACTCAG	
	ClC5R	CAGGATGTTCCGAAGCTTCA	
ClC7	ClC7F	ATGAGCACGCCTGTGACCTGCCTG	10
	ClC7R	CGAGGAAGAGATGCCTCCTGTGGC	
GlyRα1	GlyR1F	GCACCAAGCACTACAACAC	11
	GlyR1R	AGGACAGGATGACGATAAGC	
GABAAα1	GABAA1F	CTCCTACAGCAACCAGCTATACCC	
	GABAA1R	GCGGTTTTGTCTCAGGCTTGAC	12
GABAAα2	GABAA2F	AAGAGAAAGGCTCCGTCATG	
	GABAA2R	GCTTCTTGTTTGGTTCTGGAGTAG	
F4/80	F4/80F	ATGACCACACTTGCCATCCT	13
	F4/80R	GGCGAGTCGCTTCTAAGACA	
CD68	CD68F	TGGACTCAGCAGCTCTACCA	
	CD68R	CCTGTGGGTGGTCGTAGG	
CFTR	CFTRF	AATATCCTTAGCCCCTCGGA	14
	CFTRR	TGGTGGAAACAATGGCACTA	
FoxA2	FoxA2F	GTATGCTGGGAGCCGTGAAG	15
	FoxA2R	AGCCTGCGCTCATGTTGC	
SLC26A3	SLC26A3F	TTCTACCCTGTCTTCGTC	16
	SLC26A3R	ACACCGTAGGAAATAGCG	
SLC26A6	SLC26A6F	CGGGAGGCAACACGCAGAT	
	SLC26A6R	GGTGGCTGAGGAACGGAAGAC	
CYP7A1	CYP7A1F	GAGCTCATGCATGCCAATGAGAAGAG	17
	CYP7A1R	AATTCCACATACCTCAGAGC	
Bestrophin-3	BEST3F	CTCATCTCCAGCAGTGTCCA	18
	BEST3R	CAGATGAGGCGACTTGAGG	
TGR5	TGR5F	TTGCTCCTGTCAGTCTTGGCCTAT	19
	TGR5R	TTGGGTCTTCCTCGAAGCACTTGT	
T-BET	T-BETF	TCCTGTCTCCAGCCGTTTCT	
	T-BETR	CGCTCACTGCTCGGAACTCT	20
GATA-3	GATA-3 F	GGCGGCGAGATGGTACTG	
	GATA-3 R	TCTGCCCATTCATTTTATGGTAGA	

Supplemental Figures

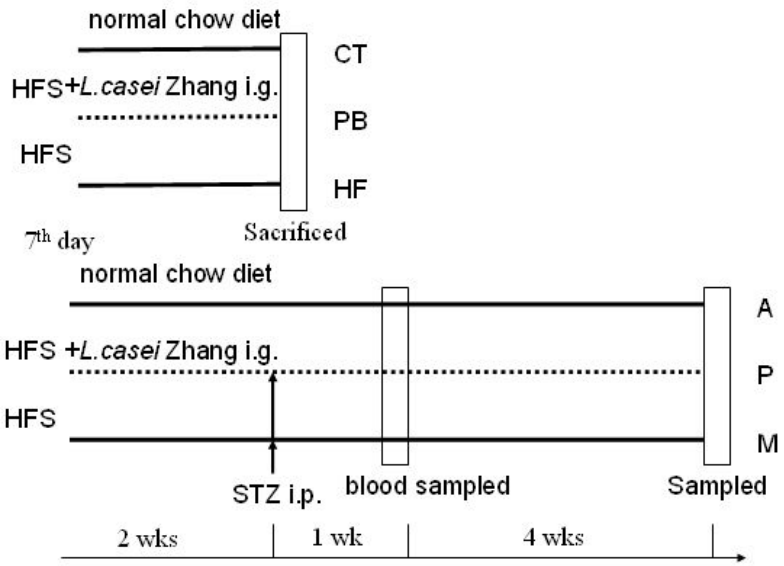

Fig. S1 Experimental design

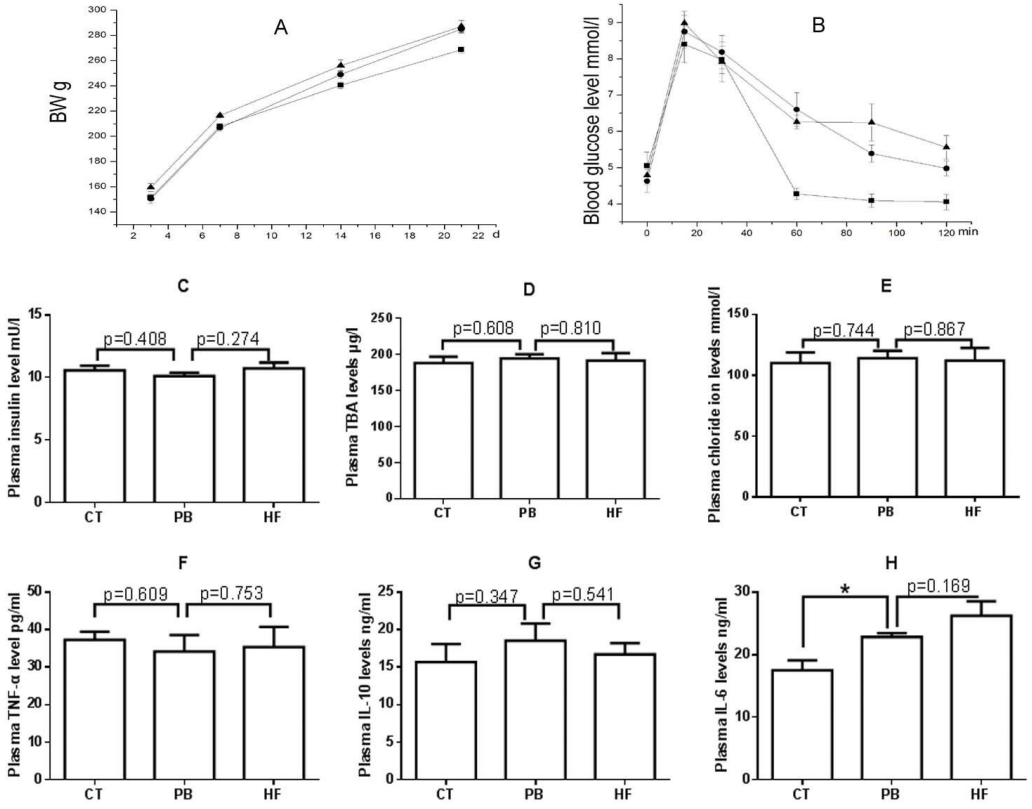

Fig. S2 Comparison of body weight (A), OGTT (B), plasma insulin levels (C), plasma TBA levels (D), plasma chloride ion levels (E), plasma TNF-α levels (F), plasma IL-10 levels (G), and plasma IL-6 levels (H) between different groups. Black triangles = HF group; black circles = PB group; black squares = CT group.* represents $p<0.05$.

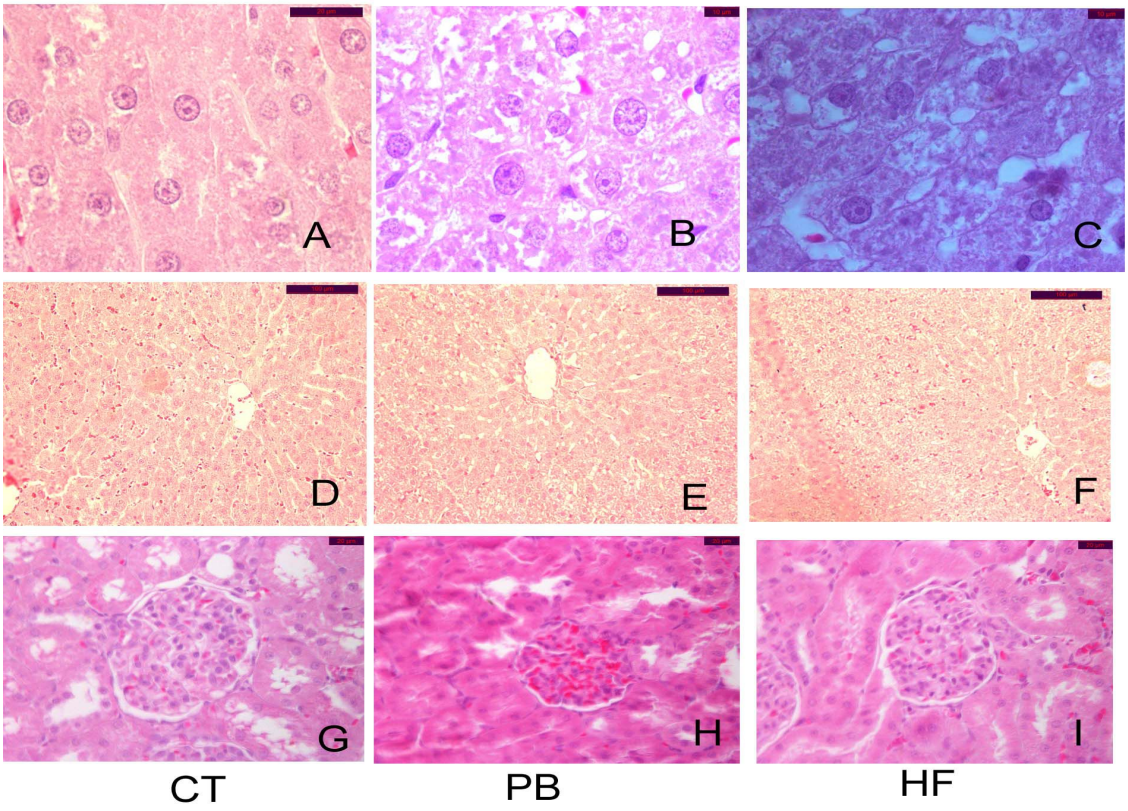

Fig. S3 Hepatic (A-F) and renal (G-I) tissue sections of three groups of rat

CT：A(×1000), D(×200), G(×1000)；PB: B(×1000), E(×200), H(×1000)；HF: C (×1000), F (×200), I (×1000).

The CT rats exhibited an intact structure of hepatic lobule (A and D), whereas HF rats showed preliminary fatty liver morphology with compressed liver sinusoids, disarranged hepatic cords and large areas of fatty vacuolization but no inflammatory infiltration (C and F). Compared to HF rats, hepatic structure was clear and areas of fatty vacuolization were reduced in PB (B and E). No significant lesion was observed in renal glomerulus of all three groups (G, H and I). However, both the kidneys of PB and HF rats exhibited fewer renal tubular cavities (white areas) compared with the CT rats (G, H and I).

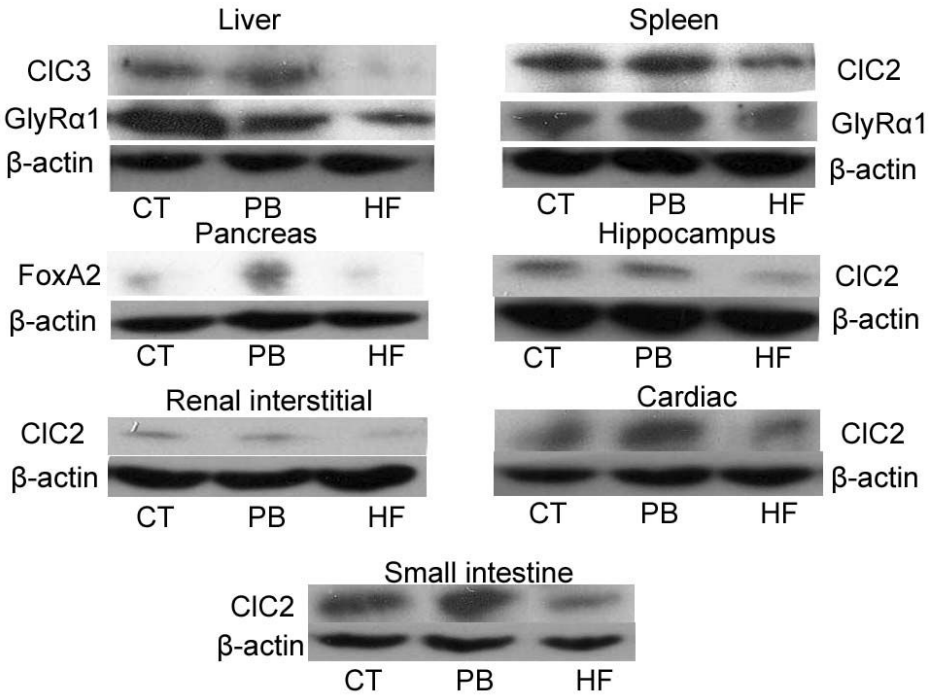

Fig. S4 The levels of target proteins in the three groups of rats

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