Electronic Supplementary Material (ESI) for Food & Function.

Supplementary tables

Supplementary table 1. Specific gene expression probes used for the quantitative real time PCR analysis.

Retroperitoneal fat gene expression analysis (*Rattus norvegicus*, Norway rat)		
Gene	**Description**	**TaqMan Gene Expression Assay**
Lep	Leptin	Rn00565158_m1
Adipoq	Adiponectin, C1Q and collagen domain containing	Rn00595250_m1
Tnf	Tumor necrosis factor a	Rn99999017_m1
Il6	Interleukin 6	Rn01410330_m1
Pparg	Peroxisome proliferator activated receptor gamma	Rn00440945_m1
Cebpa	CCAAT/enhancer binding protein (C/EBP), alpha	Rn00560963_s1
Fasn	Fatty acid synthase	Rn00569117_m1
Srebf1	Sterol regulatory element binding transcription factor 1	Rn01495769_m1
Tbp	TATA box binding protein. Housekeeping gene control	Rn01455646_m1
3T3-L1 gene expression analysis (3T3-L1 cells, *Mus musculus*, House mouse)		
Gene	**Description**	**TaqMan Gene Expression Assay**
Pparg	Peroxisome proliferator activated receptor gamma	Mm00440940_m1
Cebpa	CCAAT/enhancer binding protein (C/EBP), alpha	Mm00514283_s1
aP2/ Tfap2a	Adipocyte fatty acid binding protein	Mm00495574_m1
Fasn	Fatty acid synthase	Mm00662319_m1
Scd1	Stearoyl-Coenzyme A desaturase 1	Mm00772290_m1
Lpl	Lipoprotein lipase	Mm00434764_m1
Tbp	TATA box binding protein. Housekeeping gene control	Mm00446973_m1

Supplementary table 2. Concentration of fatty acids present in the freeze-dried strawberry blueberry powder. Results are expressed in g/100 g of fat content.

Determination	Content
Caproic acid	<0.03
Caprilic acid	<0.02
Capric acid	0.21
Lauric acid	0.17
Miristic acid	0.51
Miristoleic acid	<0.02
Palmitic acid	16.25
Palmitoleic acid	0.48
Heptadecanoic acid	0.15
Cis-10- Heptadecanoic acid	0.08
Elaidic acid	<0.03
Stearic acid	2.15
Oleic acid	20.60
Linolelaidic acid	<0.02
Linoleic acid	35.73
Gamma-Linolenic acid	<0.03
Alpha-Linolenic acid	20.71
Conjugated linoleic acid	<0.03
Arachidonic acid	1.46
Cis-11-eicosanoic acid	0.29
Araquidonic acid	<0.02
Cis-11-eicosapentanoic acid	<0.03
Behenic acid	0.65
Erucic acid	<0.03
Lignoceric acid	<0.04
Docosahexanoic acid	<0.03

Supplementary table 3. Serum glucose levels (mg/dL) obtained in the intraperitoneal glucose tolerance test (GTT)*

Intraperitoneal Glucose Tolerance Test					
	Control (n= 12)	**Control FDSB (n= 11)**	**HFS (n= 11)**	**HFS FDSB (n= 12)**	**Factor Interaction (Anova)**
Basal Glucose (mg/dL)	76.92 ± 6.46	76.09 ± 8.37	87.91 ± 7.70 $$	83.08 ± 12.43	ns
Glucose 30 min (mg/dL)	130.64 ± 24.71	137.27 ± 17.76	192.70 ± 32.16 $$$	157.08 ± 30.27 **	0.0126
Glucose 60 min (mg/dL)	136.33 ± 19.37	133.20 ± 19.40	180.00 ± 13.29 $$$	172.40 ± 23.26	ns
Glucose 90 min (mg/dL)	128.50 ± 9.40	125.50 ± 16.58	164.82 ± 18.08 $$$	153.40 ± 17.09	ns
Glucose 120 min (mg/dL)	104.17 ± 11.50	99.50 ± 11.50	122.36 ± 14.00 $$$	114.75 ± 15.27	ns
Glucose 180 min (mg/dL)	89.18 ± 7.21	90.36 ± 9.82	110.18 ± 11.24 $$$	98.00 ± 12.09 *	0.0368
AUC $_{0\text{-}180}$	18800 ± 1819	18405 ± 1675 *	25281 ± 999 $$$	22127± 2489 *	ns

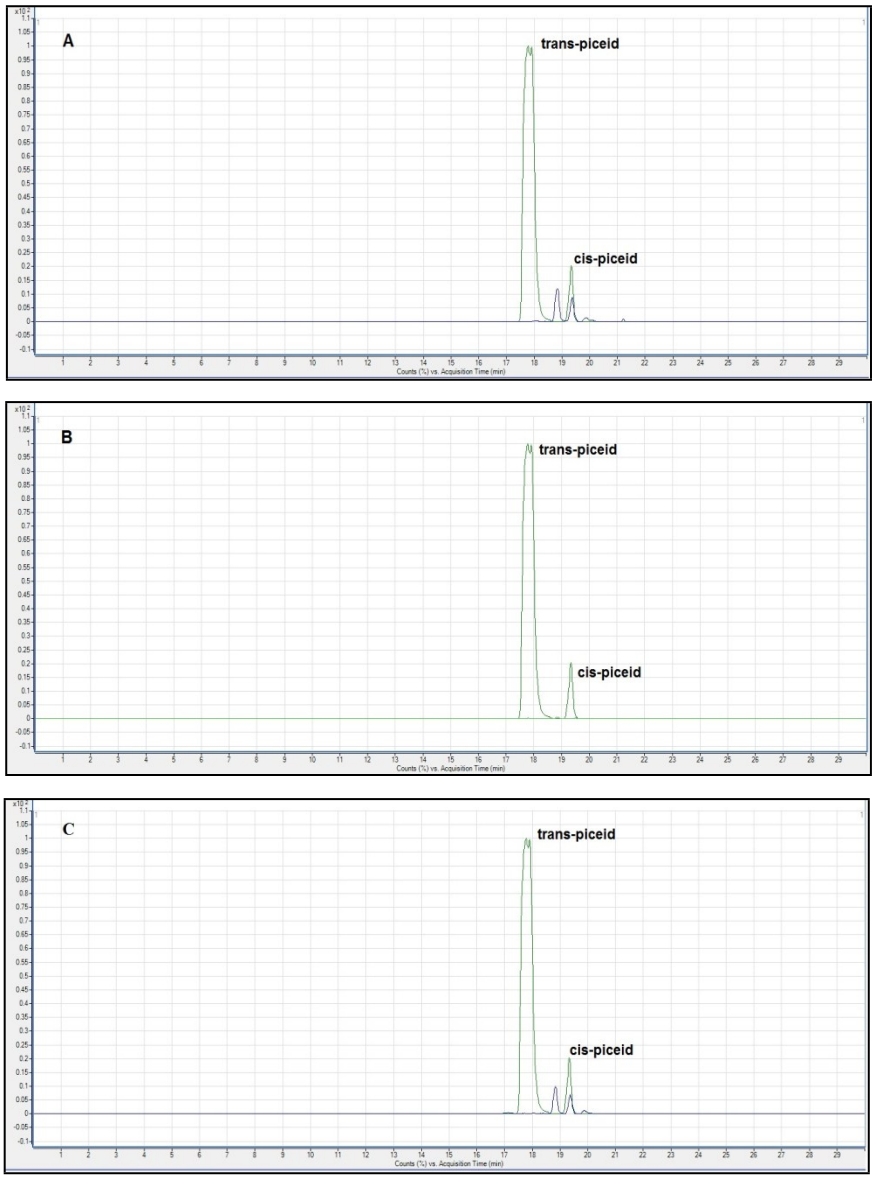
* All the results are expressed as the mean ± SD.
Statistical analyses were performed using the ANOVA 2x2 test (Treatment x Diet) followed by Student T-test to detect differences between each FDSB treated group against its corresponding control when positive interaction (factor interaction <0.05).
HFS, high-fat-sucrose; FDSB, freeze-dried strawberry blueberry; min, minute; AUC, area under the curve
AUC was calculated with the formula: AUC 0-180 = 30 x [Glycemia 30 + Glycemia 60 + Glycemia 90 + Glycemia 120 + (Glycemia baseline + Glycemia 180 x 2)/2].
*/$p<0.05; **/$$p<0.01; ***/$$$p<0.001; #p<0.1. Significance (*) refers to the effect of FDSB-treated groups with respect to untreated. Significance ($) refers to the effect of HFS-diet group with respect to control-diet.

Supplementary table 4. Putative metabolites detected in serum samples by metabolomics analysis.

HFS	HFS-FDSB	RT (min)	Detected mass (m/z)	Putative metabolites	Assignation	Mass difference (mDa)
10.35	13.11	18.80	505.0588	Resveratrol-3-glucoside sulfate	$[M+Cl]^-$	-1.05
				Gallic acid-O-(6-galloylglucoside)	$[M+Na-2H]^-$	1.25
				Epigallocatechin 3-O-caffeate	$[M+K-2H]^-$	-4.45
16.09	14.56	0.08	110.9731	Methyl-thiophenethiol	$[M+H_2O-H]^-$	-0.39
				3,5-dichloro-2-methylmuconolactone	$[M-2H]^{2-}$	1.81
				3,5-dichloro-2-methylmuconate		
16.34	15.26	28.87	295.2595	Hydroxy-nonadeconoic acid	$[M+H_2O-H]^-$	4.18
				Nonadecenoic acid	$[M-H]^-$	4.68
14.06	13.01	28.87	296.2651	unkown		
17.23	16.16	16.22	242.0757	Gamma-glutamyl-Aspartate	$[M+H_2O-H]^-$	2.05
14.17	13.04	3.54	409.9800	unkonwn		
14.48	13.44	2.78	333.0553	alpha-D-Galactosyl-(1,1')-sn-glycerol 3-phosphate	$[M-H]^-$	2.87
				Octanoyl-glycerone 3-phosphate	$[M+K-2H]^-$	-4.23
11.87	13.71	21.28	865.5085	phosphatidylinositol	$[M+CH_3COO]^-$	-0.10
12.88	14.33	20.42	866.5156	phosphatidylserine	$[M+CH_3COO]^-$	3.35
				phosphatidylcholine	$[M+K-2H]^-$	3.35
22.17	19.83	29.45	158.9610	Arsenous acid	$[M+CH3OH+H]^+$	2.28
				trifluoroacetic acid	$[M+2Na-H]^+$	2.98
18.88	17.26	29.98	239.0833	Tetrapeptide (Gly Thr Tyr Asp)	$[M+H+Na]^+$	-0.05
22.42	21.32	28.02	780.5450	unknown		
20.76	19.74	27.74	562.3151	2-deoxy-20-hydroxyecdysone 22-phosphate	$[M+NH_4]^+$	-1.22

The data in HFS and HFS-FDSB columns refers to mean intensity of metabolites and are presented as log 2.
Abbreviations: RT, retention time.

Supplementary Figures



Supplementary Figure 1. Chromatograms obtained for trans and cis-piceid. A) Commercial standard piceid (97 % trans-piceid and 3 % cis-piceid) and freeze-dried strawberry. B) Commercial standard piceid and freeze-dried blueberry. C) Commercial standard piceid and freeze-dried strawberry and blueberry.