

Table 1 Primer sequences in *Sirt1* and *Nrf2* gene polymorphisms

Polymorphisms	Primer sequences
<i>Sirt1</i> rs7895833	F1:5'-CCCAGGGTTCAACAAATCTATGTTG-3'
	F2:5'-GGTGGTAAAAGGCCTACAGGAAA-3'
	R1:5'-GCTTCCTAATCTCCATTACGTTGAC-3'
	R2:5'-CCTCCCAGTCAACGACTTTATC-3'
<i>Sirt1</i> rs2273773	F1:5'-GTGTGTCGCATCCATCTAGATAC-3'
	F2:5'-:CTCTCTGTCAACAAATTCATAGCCT-3'
	R1:5'-GTAGTTTTTCCTTCCTTATCTGACAG-3'
	R2:5'-CTGAAGTTTACTAACCATGACACTG-3'
<i>Nrf2</i> rs6721961	F1:5'-CCCTGATTTGGAGGTGCAGAACC-3'
	F2:5'-GGGGAGATGTGGACAGCG-3'
	R1:5'-GCGAACACGAGCTGCCGGA-3'
	R2:5'-CTCCGTTTGCCTTTGACGAC-3'

Table 2. Baseline Characteristics of Participants According to the Presence or Absence of Mets.

Variables	MetS	Mets absent	P value	r
N (%)	141(20.4)	549(79.6)		
Male, n (%)	67(47.5)	211(38.4)	0.05	-0.075
Current smoker, n (%)	40(28.4)	123(22.4)	0.137	-0.057
Alcohol drinker, n (%)	26 (18.4)	115(20.9)	0.51	-0.025
Age (years)	58.01±7.76	54.32±7.57	0.357	0.157
BMI(kg/m ²)	25.79±3.20	22.97±2.66	<0.001	0.353
WC (cm)	86.15±8.29	76.57±8.33	<0.001	0.408
WHR	0.92±0.06	0.86±0.07	<0.001	0.357
Fat% (%)	32.88±7.34	28.57±6.95	<0.001	0.226
SFA (cm ²)	184(139.1,241.9)	152.7(113.05,199.75)	<0.001	0.18
VFA (cm ²)	111.3(76.81,152.05)	67(45.34,102)	<0.001	0.345
SBP (mm Hg)	131.78±15.53	119.99±14.86	<0.001	0.299
DBP (mm Hg)	84.92±10.27	79.4±9.09	<0.001	0.23
FPG (mmol/L)	5.34(4.9,6.44)	4.79(4.4,5.17)	<0.001	0.327
2h PG (mmol/L)	7.98(5.45,11.06)	5.28(4.35,6.35)	<0.001	0.35
HOMA-IR	5.71(4.34,8.52)	3.57(2.75,4.77)	<0.001	0.411
HbA1c (%)	6(5.5,6.4)	5.6(5.3,5.9)	<0.001	0.266
TC (mmol/L)	5.82±1.31	5.52±1.08	0.005	0.125
TG (mmol/L)	2.17(1.78,2.91)	1.22(0.9,1.55)	<0.001	0.489
HDL-C(mmol/L)	1.25±0.34	1.51±0.35	<0.001	-0.299
LDL-C(mmol/L)	2.49±0.74	2.41±0.55	0.176	0.049
UA(mmol/L)	314.98(261.49,374.41)	261.49(213.95,320.92)	<0.001	0.233
CREA(μmol/L)	70.72(61.88,79.56)	61.88(61.88,79.56)	0.211	0.048
BUN(mmol/L)	5.87±1.61	5.73±1.28	0.274	0.024
UACR(mg/mmol)	5.92(4.09,13.93)	4.47(3.03,6.83)	<0.001	0.202

Table 3. Associations between the SNPs of *Sirt1* and *Nrf2* gene and the risk of MetS

		MetS N(%)	non-MetS ^a N(%)	<i>P</i>	Crude OR (95% CI)	Adjusted OR (95% CI)
rs7895833	GG	74 (52.5)	275 (51.3)	0.015*	1.00(ref.)	1.00(ref.)
	AG	48 (34)	237 (41.5)	0.016*	2.042(0.97-2.224)*	1.937(1.09-2.144)*
	AA	19 (13.5)	37 (7.3)	0.038*	2.508(1.21-3.637)*	2.414(1.37-3.512)*
rs2273773	TT	82 (58.1)	293 (53.4)	0.423	1.00(ref.)	1.00(ref.)
	CT	51 (36.2)	231 (42.1)	0.752	0.784(0.284-1.617)	0.668(0.314-1.746)
	CC	8 (5.7)	25 (4.5)	0.393	1.120(0.486-2.582)	1.037(0.237-1.795)
rs6721961	AA	72 (51.1)	305 (54.8)	0.855	1.00(ref.)	1.00(ref.)
	CA	60 (42.5)	208 (38.4)	0.721	1.226(0.526-2.529)	1.062(0.533-1.804)
	CC	9 (6.4)	36 (6.8)	0.593	1.074(0.435-2.048)	0.955(0.459-2.012)

Bold indicated significant correlation.

^a: The observed genotype frequencies of SNPs among the non-MetS were all in agreement with the Hardy–Weinberg equilibrium ($P > 0.05$ for all).

*: $P < 0.05$.

Table 4. Associations between the *Sirt1* rs7895833 and anthropometric and metabolic characteristics

	AA(56)	AG(285)	GG(349)	Additive effect (AA VS. AG VS. GG)	P_1	Dominant effect (AA+AG VS. GG)	P_2
BMI(kg/m ²)	24.18±3.25	23.42±2.89	23.55±3.05	0.007±0.022	0.736	0.006±0.017	0.719
WC (cm)	80.67±8.86	78.28±9.30	78.38±9.10	0.079±0.066	0.231	-0.058±0.052	0.265
WHR	0.89±0.06	0.87±0.07	0.87±0.07	6.922±5.894	0.241	5.069±4.614	0.272
Fat% (%)	29.96±8.09	28.99±6.60	29.75±7.58	0.005±0.007	0.448	0.006±0.005	0.26
SFA (cm ²)	157.3(116.3,224)	153.6(117.95,202.6)	161.1(119.1,211.1)	0±0.001	0.785	-0.00007±0.001	0.896
VFA (cm ²)	81.52(61.72,112.63)	73.59(48.85,112.8)	73.4(50.53,111.25)	0±0.001	0.669	0±0.001	0.634
SBP (mm Hg)	123.12±15.79	122.07±16.01	122.55±15.51	0.001±0.003	0.568	0.00002±0.002	0.99
DBP (mm Hg)	79.45±9.34	80.81±9.97	80.47±9.33	-0.003±0.004	0.46	-0.001±0.003	0.868
FPG (mmol/L)	4.95(4.47,5.87)	4.84(4.46,5.34)	4.84(4.46,5.31)	0.039±0.037	0.298	0.011±0.029	0.702
2h PG (mmol/L)	5.36(4.35,9.4)	5.5(4.51,6.9)	5.45(4.51,7.15)	0.003±0.013	0.807	0.004±0.01	0.692
HOMA-IR	4.33(2.79,6.35)	3.96(3,5.13)	3.89(2.93,5.42)	-0.017±0.014	0.226	0.023±0.011	0.035*
HbA1c (%)	5.65(5.33,6.08)	5.6(5.3,6)	5.7(5.4,6)	0.033±0.053	0.542	0.018±0.042	0.664
TC (mmol/L)	5.32±1.10	5.56±1.08	5.64±1.18	-0.117±0.055	0.033*	-0.104±0.043	0.016*
TG (mmol/L)	1.42(0.91,2.22)	1.31(0.96,1.89)	1.3(0.97,1.83)	-0.012±0.022	0.602	-0.01±0.017	0.563
HDL-C(mmol/L)	1.39±0.39	1.47±0.37	1.45±0.35	0.002±0.089	0.979	-0.017±0.069	0.811
LDL-C(mmol/L)	2.51±0.61	2.36±0.57	2.24±0.61	0.338±0.098	0.001*	0.272±0.077	<0.001*

	AA(56)	AG(285)	GG(349)	Additive effect (AA VS. AG VS. GG)	<i>P</i>₁	Dominant effect (AA+AG VS. GG)	<i>P</i>₂
UA(mmol/L)	294.2(219.9,332.8)	267.4(213.9,332.8)	273.4(219.9,329.8)	0.001±0	0.094	0±0	0.23
CREA(μmol/L)	70.72(61.88,79.56)	70.72(61.88,79.56)	61.88(61.88,79.56)	-0.004±0.002	0.088	-0.002±0.002	0.274
BUN(mmol/L)	5.87±1.32	5.64±1.36	5.84±1.35	0.022±0.02	0.256	0.025±0.015	0.111
UACR(mg/mmol)	4.73(3.33,7.75)	4.56(2.95,7.27)	4.95(3.39,8.14)	0±0	0.466	0.0001±0	0.621

Bold indicated significant correlation.

*: $P < 0.05$

Supplementary Table S1: Associations between the *Sirt1* rs2273773 and anthropometric and metabolic characteristics

	CC(33)	CT(282)	TT(375)	Additive effect (AA VS. AG VS. GG)	P_1	Dominant effect (AA+AG VS. GG)	P_2
BMI(kg/m ²)	23.58±4.05	23.54±3.06	23.55±2.85	0.008±0.02	0.706	-0.012±0.017	0.49
WC (cm)	77.82±11.66	78.49±9.37	78.61±8.79	-0.081±0.062	0.19	-0.066±0.053	0.212
WHR	0.88±0.08	0.87±0.07	0.87±0.07	7.925±5.515	0.151	6.174±4.678	0.187
Fat% (%)	29.30±9.86	29.12±7.0	29.71±7.15	0.005±0.007	0.406	0.008±0.006	0.148
SFA (cm ²)	141.3(116.65,189.6)	153.7(117.72,204.43)	160.7(119.5,206.7)	0±0.001	0.535	0±0.001	0.735
VFA (cm ²)	80.42(40.68,115.80)	73.18(52.29,112.68)	75.31(49.88,110.9)	-0.001±0.001	0.13	-0.001±0.001	0.238
SBP (mm Hg)	125.32±18.58	123.17±16.21	121.56±15.06	0.003±0.002	0.243	-0.002±0.002	0.42
DBP (mm Hg)	81.30±8.23	81.12±9.77	80.01±9.57	0±0.004	0.963	-0.001±0.003	0.719
FPG (mmol/L)	4.57(4.26,5.20)	4.84(4.46,5.34)	4.84(4.46,5.34)	0.028±0.035	0.428	0.02±0.03	0.494
2h PG (mmol/L)	5.23(3.99,7.51)	5.53(4.61,7.00)	5.45(4.51,7.15)	-0.003±0.012	0.806	0±0.011	0.985
HOMA-IR	3.49(2.51,5.36)	4.00(2.96,5.29)	3.93(2.96,5.45)	0.007±0.013	0.599	0.007±0.011	0.537
HbA1 _c (%)	5.5(5.3,5.9)	5.6(5.4,6)	5.6(5.3,6)	-0.022±0.05	0.66	-0.035±0.042	0.407
TC (mmol/L)	5.55±0.74	5.58±1.17	5.59±1.14	-0.012±0.051	0.813	0.015±0.044	0.731
TG (mmol/L)	1.05(0.80,2.22)	1.25(0.96,1.82)	1.35(0.98,1.89)	-0.007±0.021	0.742	-0.011±0.018	0.545
HDL-C(mmol/L)	1.39±0.39	1.47±0.38	1.45±0.34	-0.057±0.083	0.495	-0.076±0.07	0.28
LDL-C(mmol/L)	2.40±0.37	2.43±0.59	2.43±0.62	-0.011±0.092	0.905	-0.027±0.078	0.733

	CC(33)	CT(282)	TT(375)	Additive effect (AA VS. AG VS. GG)	P_1	Dominant effect (AA+AG VS. GG)	P_2
UA(mmol/L)	273.38(231.78,395.21)	267.44(213.95,326.87)	273.38(219.89,332.81)	0±0	0.757	0±0	0.488
CREA(μmol/L)	70.72(61.88,92.82)	66.3(61.88,79.56)	70.72(61.88,79.56)	-0.001±0.002	0.544	-0.001±0.002	0.748
BUN(mmol/L)	6.83±2.08	5.58±1.28	5.81±1.29	0.015±0.019	0.433	0.011±0.016	0.471
UACR(mg/mmol)	5.31(3.10,13.41)	4.68(3.33,7.18)	4.72(3.09,7.74)	0.00009±0	0.709	0±0	0.561

Supplementary Table S2: Associations between the *Nrf2* rs6721961 and anthropometric and metabolic characteristics

	CC(377)	CA(268)	AA(45)	Additive effect (CC VS. CA VS.AA)	<i>P</i> ₁	Dominant effect (CC+CA .AA)	<i>P</i> ₂
BMI(kg/m ²)	23.14±2.46	23.72±3.15	23.47±2.95-	-0.029±0.021	0.169	0.003±0.008	0.753
WC (cm)	77.20±9.48	78.92±9.67	78.40±8.77	0.151±0.065	0.019	0.03±0.026	0.248
WHR	0.87±0.07	0.87±0.07	0.87±0.07	-1.604±5.747	0.018	-2.625±2.31	0.256
Fat% (%)	27.84±6.87	29.49±7.14	29.62±7.34	-0.009±0.007	0.211	-0.003±0.003	0.351
SFA (cm ²)	163(118.7,208.85)	152.85(118.83,202.43)	153.7(119.9,201.85)	0±0.001	0.491	0±0	0.542
VFA (cm ²)	73.4(53.33,109.4)	76.56(49.32,117.65)	67.3(33.05,110.35)	0±0.001	0.653	0±0	0.347
SBP (mm Hg)	119.20±13.65	123.50±16.0	122.0±15.72	-0.000±0.002	0.968	0±0.001	0.657
DBP (mm Hg)	78.58±9.50	81.21±10	80.28±9.29	0.001±0.004	0.774	0±0.002	0.782
FPG (mmol/L)	4.84(4.46,5.34)	4.90(4.47,5.34)	4.57(4.26,5.06)	-0.094±0.036	0.011	-0.028±0.015	0.061
2h PG (mmol/L)	5.45(4.4,7.01)	5.5(4.62,7.15)	5.61(4.48,7.04)	0.021±0.013	0.098	0.006±0.005	0.232
HOMA-IR	3.96(2.93,5.41)	4.10(3.08,5.45)	3.55(2.44,4.75)	0.001±0.013	0.926	0.005±0.005	0.357
HbA1 _c (%)	5.6(5.35,6)	5.65(5.4,6)	5.7(5.3,5.95)	0.027±0.052	0.605	0.008±0.021	0.713
TC (mmol/L)	5.56±1.15	5.56±1.15	5.6±1.12	-0.033±0.053	0.531	0.026±0.021	0.22
TG (mmol/L)	1.3(0.97,1.86)	1.33(0.97,1.87)	1.26(0.92,1.82)	-0.005±0.022	0.812	-0.013±0.009	0.127
HDL-C(mmol/L)	1.39±0.28	1.45±0.38	1.47±0.36	-0.09±0.087	0.3	-0.068±0.035	0.051

	CC(377)	CA(268)	AA(45)	Additive effect (CC VS. CA VS.AA)	<i>P</i>₁	Dominant effect (CC+CA .AA)	<i>P</i>₂
LDL-C(mmol/L)	2.40±0.64	2.40±0.58	2.44±0.6	-0.064±0.095	0.503	-0.037±0.038	0.33
UA(mmol/L)	273.38(213.95,332.81)	270.41(219.89,337.27)	297.15(249.61,338.75)	0±0	0.3	0±0	0.136
CREA(μmol/L)	70.72(61.88,79.56)	70.72(61.88,79.56)	70.72(61.88,79.56)	-0.004±0.002	0.143	-0.001±0.001	0.338
BUN(mmol/L)	5.82±1.18	5.76±1.17	5.75±1.49	0.009±0.019	0.624	0.001±0.008	0.894
UACR(mg/mmol)	4.73(3.22,7.97)	4.91(3.26,7.47)	4.29(2.84,6.34)	0.000±0	0.822	-0.000±0	0.542