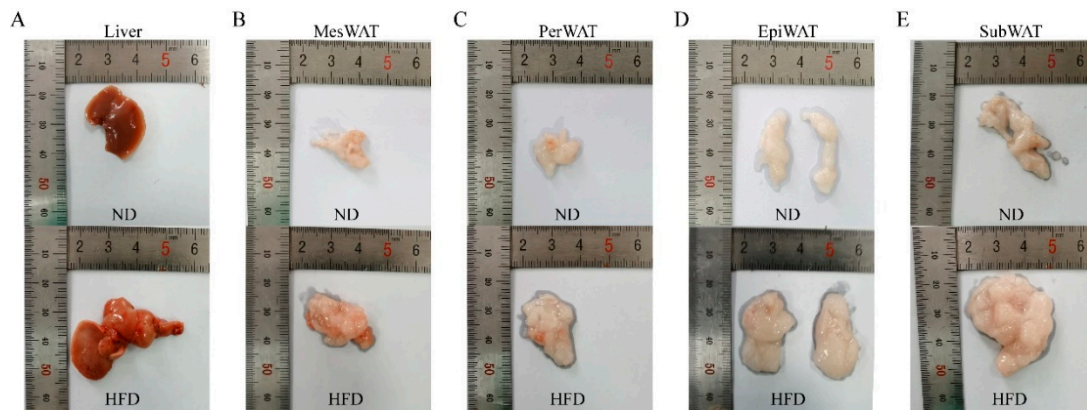
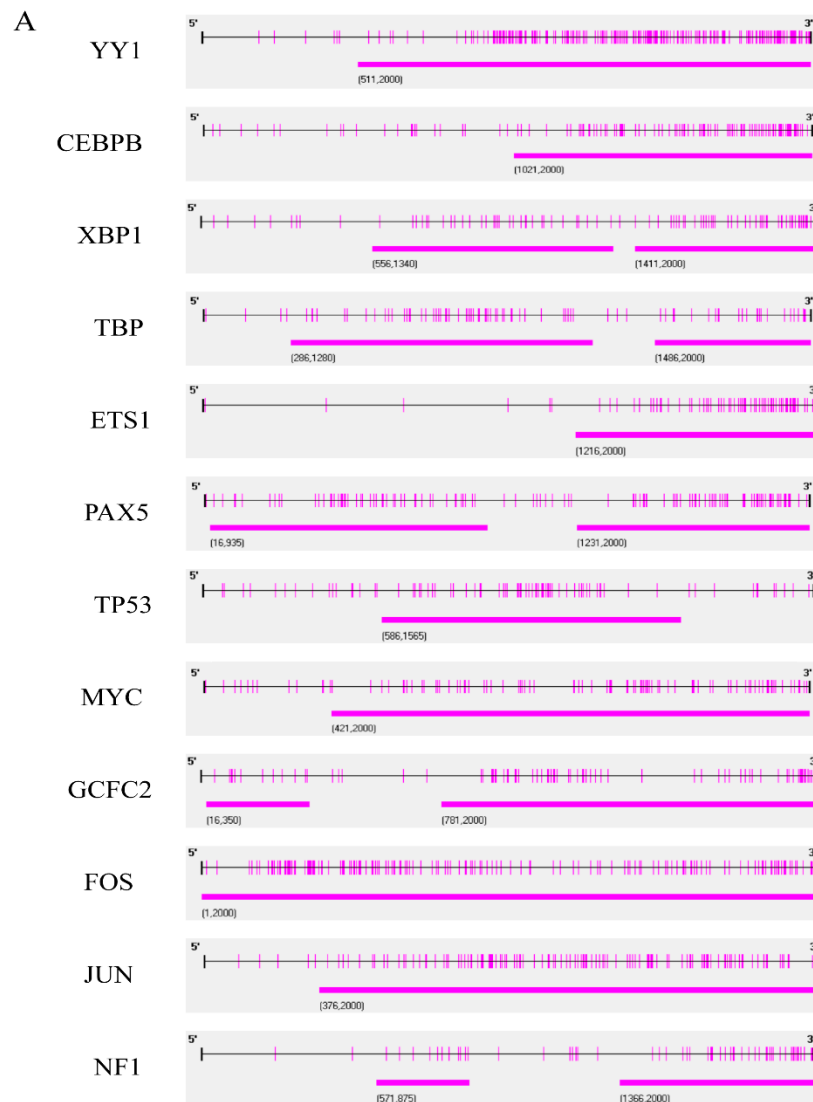


Supplementary Material



Supplemental Figure S1. General view of the liver and various adipose tissues. (A-E) After 12 weeks of high-fat diet, images of liver and various fatty tissues were collected after the death of mice.



Supplemental Figure S2. DPP4 Transcription Factor GpG Island. (A) Use metal prime express_V1 software analyzes the CpG island of *YY1*, *CEBPB*, *XBP1*, *TBP*, *ETS1*, *PAX5*, *TP53*, *MYC*, *GCFC2*, *FOS*, *JUN* and *NF1*.

Supplementary Table S1. Primer sequence table

Species	primer	sequence 5'→3'
Human	Homo- <i>microRNA-548ag</i> -F	AAAGGUAAUUGUGGUUUCUGC
	Homo- <i>DNMT3B</i> -F	GGATGAAGATCAGAGCCGA
	Homo- <i>DNMT3B</i> -R	CAAGACAAACAGCCATCTTCC
	Homo- <i>DPP4</i> -F	GGGTCACATGGTCACCAGTG
	Homo- <i>DPP4</i> -R	TCTGTGTCGTTAAATTGGGCATA
	Homo- <i>GAPDH</i> -F	TGTGGGCATCAATGGATTTGG
	Homo- <i>GAPDH</i> -R	ACACCATGTATTCCGGGTCAAT
Mouse	Mus- <i>DNMT3B</i> -F	CGCACAACCAATGACTCTGCTG
	Mus- <i>DNMT3B</i> -R	GGTGACTTCAGAAGCCATCCGT
	Mus- <i>DPP4</i> -F	CACCTCTGATGGAAGCAGCTTC
	Mus- <i>DPP4</i> -R	GATAATCGCTGGTCAGAGCTTCG
	Mus- <i>GAPDH</i> -F	CATCACTGCCACCCAGAAGACTG
	Mus- <i>GAPDH</i> -R	ATGCCAGTGAGCTTCCCGTTTCAG
	Mus- <i>U6</i> -F	CGCTTCGGCAGCACATATAC
	Mus- <i>U6</i> -R	AAATATGGAACGCTTCACGA

Supplementary Table S2. Correlation analysis between miR-548ag and Serum biochemical parameters of individuals

Index (n=220)	miR-548ag	
	R	P-value
Height	-0.190	0.005**
Weight	0.078	0.253
BMI	0.209	0.002**
FPG	0.209	0.002**
TG	0.248	<0.001***
TC	0.191	0.005**
LDL	0.207	0.003**
HDL	0.214	0.002**

Statistical analysis was performed using Spearman, * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$.

Supplementary Table S3. The genetic association database class

Term	Count	P-Value
Chemdependency	14	0.014622
Hematological	8	0.02736
Aging	6	0.037826
Metabolic	16	0.059029
Unknown	7	0.095867

Supplementary Table S4. Effects of mir-548ag and DNMT3b on methylation of CpG site in promoter region of DPP4 gene in HepG2 cells and liver

	Group	Methylation rate	Demethylation rate
HepG2	miR-548ag-NC	0	100% (170/170)
	miR-548ag-mimic	1.2% (2/170)	98.8% (168/170)
	OE-DNMT3B-NC	3.5% (6/170)	96.5% (164/170)
	OE-DNMT3B	0	100% (170/170)
	si-DNMT3B-NC	0	100% (170/170)
	si-DNMT3B	1.8% (3/170)	98.2% (167/170)
Liver	miR-548ag-mimic-NC	0.5% (1/220)	99.5% (219/220)
	miR-548ag-mimic	0.5% (1/220)	99.5% (219/220)
	miR-548ag-inhibitor-NC	0.5% (1/220)	99.5% (219/220)
	miR-548ag-inhibitor	0.3% (0.7/220)	99.7% (219.3/220)

χ^2 test, $P>0.05$.