

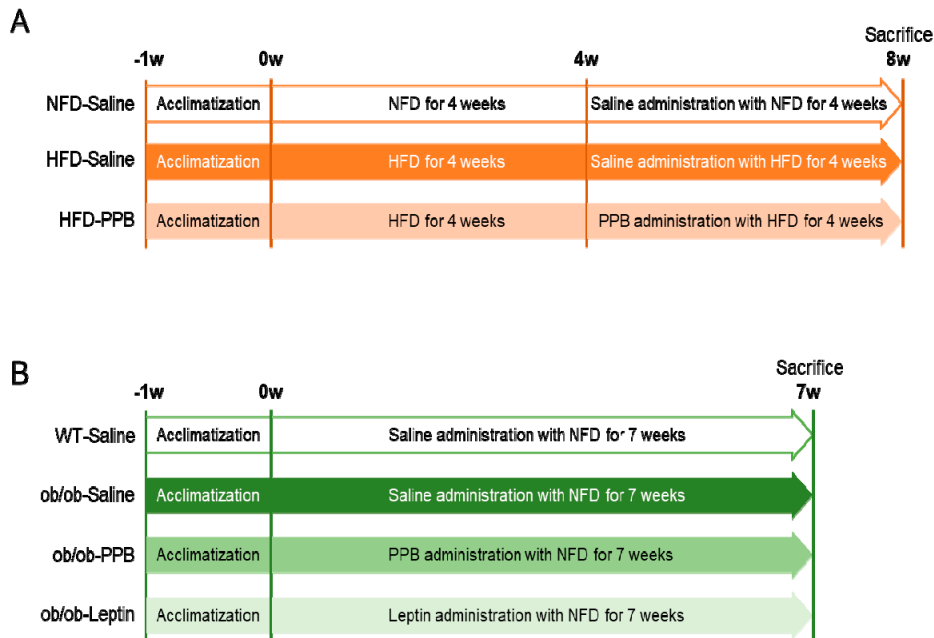
## Supplementary material

Table S1. List of primer for Quantitative polymerase chain reaction (qRT-PCR)

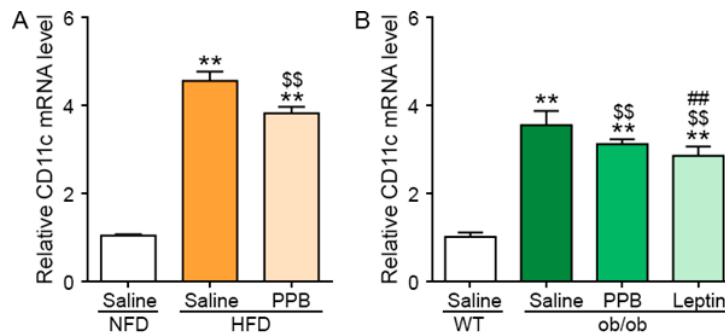
Gene		Primers
CD11b	Forward	5'-TCAACACAACCAGAGTGGATTC-3'
	Reverse	5'- CCTAAAACCAAGCTTTGGACAC-3'
CD86	Forward	5'-AGCAACTAATGCTGAAAGCAC-3'
	Reverse	5'-CTCAGACCTGCCAAAGTTCTCT-3'
CD206	Forward	5'-TGTATTCTTTGCCTTTCCCAGT-3'
	Reverse	5'-GATAAAAGCCAGAAGCAGGAGA-3'
TNF- $\alpha$	Forward	5'-TTCTGTCTACTGAACTTCGGGGTGATCGGTCC-3'
	Reverse	5'-GTATGAGATAGCAAATCGGCTGACGGTGTGGG-3'
IL-6	Forward	5'-CTGCAAGAGACTTCCATCCAGT-3'
	Reverse	5'-TCCTCTGTGAAGTCTCCTCTCC-3'
PPAR $\gamma$	Forward	5'-TGGCAAAGCATTGTATGACTC-3'
	Reverse	5'-ATTTGTCCGTTGTCTTTCCTGT-3'
ACC	Forward	5'-AGCTAACCCAACCTCAGCAAGAC-3'
	Reverse	5'-GCAAATGGGAAGCAATAAGAAC-3'
FAS	Forward	5'-CTCCGAGAGTTTAAAGCTGAGG-3'
	Reverse	5'-GGGCCTCCTTGATATAATCCTT-3'
TLR4	Forward	5'-ATTCAGAGCCGTTGGTGTATCT-3'
	Reverse	5'-TCAAGGACAATGAAGATGATGC-3'
PERK	Forward	5'-CATCAGCACTTTAGATGGACGA-3'
	Reverse	5'-AGATGAAACCAAGGAACCAGAC-3'
eIF2a	Forward	5'-GAAGTGCCTAGTGAGGAGCCTA-3'
	Reverse	5'-CTCTTCATGCAGTTTGGAAATTG-3'
IRE1	Forward	5'-ATCTGAAAAGGTTCCGCTCATA-3'
	Reverse	5'-TAGTGGTGCTTCTTGTTCCTCA-3'
Xbp1	Forward	5'-TTGAGGAAGCACCTCTAAGCTC-3'
	Reverse	5'-GGATGAAGTCATCTTCCAAAGG-3'
CEBP	Forward	5'-AGAAGTCGGTGGACAAGAACAG-3'
	Reverse	5'-GTTGCGTTGTTGGCTTTATCT-3'
CD11c	Forward	5'-AGAAGTGTTCACCACCCAAAGT-3'
	Reverse	5'-CAAGTTGTCCCCTTGTTCCTC-3'
b-actin	Forward	5'-ACAAAGCTGTTCAGTGTCTCCA-3'
	Reverse	5'-CTCCGTTTCCAGAATACACACA-3'

**Table S2. List of antibodies used in Immunoblotting**

<b>Antigen (host)</b>	<b>Company</b>	<b>Cat. No</b>	<b>Dilution rate</b>
$\beta$ -actin (rabbit)	Abcam	ab8227	1:5,000
NF- $\kappa$ B (rabbit)	Cell signaling	8242S	1:1,000
SOCS3 (mouse)	Santa cruz	sc-73045	1:1,000
STAT3 (mouse)	Cell signaling	#9139	1:1,000
pSTAT3(mouse)	Santa cruz	sc-8059	1:1,000
Ob-R (rabbit)	Abcam	ab5593	1:2,000



**Figure S1. Experimental scheme image for animal modeling.** Experimental scheme showed animal modeling of diet induced obese mice (DIO) model and leptin deficiency mice (ob/ob) model. (A) To make DIO model, normal fat diet (NFD) or 45% high fat diet (HFD) fed for 4 weeks to C57BL/6 male mice, then 0.9% Saline (HFD-saline) or 2.5 mg/kg PPB (HFD-PPB) was daily administrated with the HFD next 4 weeks. All animals were sacrificed 8 weeks after the start of the experiment. (B) To make ob/ob model, wild type (C57BL/6) mice and ob/ob mice fed NFD for 7 weeks. During 7 weeks, 0.9% Saline (ob/ob-saline), 0.85 mg/kg/day Leptin (ob/ob-Leptin) or 2.5 mg/kg/day PPB (ob/ob-PPB) was daily administrated with the NFD. All animals were sacrificed 7 weeks after the start of the experiment.



**Figure S2. mRNA expression of CD11c as adipose tissue macrophages in visceral fat tissue.** mRNA levels of CD11c as a adipose tissue macrophage marker in (A) visceral fat of DIO mice model and (B) ob/ob mice model were measured by qRT-PCR. All mRNA levels are expressed as relative levels normalized to  $\beta$ -actin of the NFD-Saline group or WT-saline group. Significance represented as \*\*,  $p < 0.01$  versus NFD-Saline or WT-saline; \$\$,  $p < 0.01$  versus HFD-Saline or ob/ob-Saline; ##,  $p < 0.01$  versus ob/ob-PPB. PPB, pyrogallol-phloroglucinol-6,6-bieckol