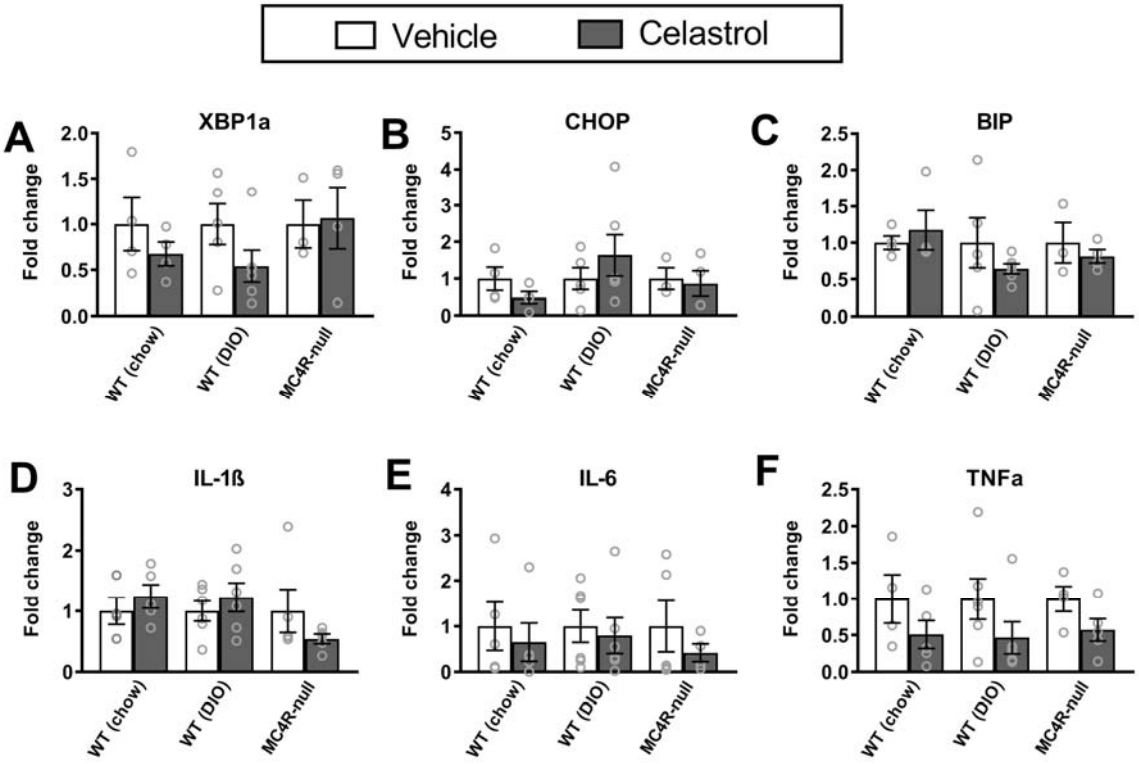
SUPPLEMENTARY DATA

Supplementary Table S1. qPCR primer list

Symbol	Forward (5'->3')	Reverse (5'->3')	GenBank Accession
sXBP1a	CTGAGTCCGAATCAGGTGCAG	GTCCATGGGAAGATGTTCTGG	NM_001271730
CHOP	CCACCACACCTGAAAGCAGAA	AGGTGAAAGGCAGGGACTCA	NM_007837
BIP	TTCAGCCAATTATCAGCAAACTCT	TTTTCTGATGTATCCTCTTCACCAGT	NM_001163434
ATF4	GGGTTCTGTCTTCCACTCCA	AAGCAGCAGAGTCAGGCTTTC	NM_009716
IL-1ß	GCAACTGTTCCTGAACTCAACT	ATCTTTTGGGGTCCGTCAACT	NM_008361
IL-6	TAGTCCTTCCTACCCCAATTTCC	TTGGTCCTTAGCCACTCCTTC	NM_031168
TNFα	CCCTCACACTCAGATCATCTTCT	GCTACGACGTGGGCTACAG	NM_013693
AGRP	CGGCCACGAACCTCTGTAG	CTCATCCCCTGCCTTTGC	NM_007427
NPY	TCCGCTCTGCGACACTACAT	GGGACAGGCAGACTGGTTTC	NM_023456
POMC	GAGGCCACTGAACATCTTTGTC	GCAGAGGCAAACAAGATTGG	NM_001278581
LepRb	GGAGCCATTACCTAAGAACCC	TGACATTCACATCCCCGAAG	NM_001122899
SOCS3	AGAGCGGATTCTACTGGAGC	TGGATGCGTAGGTTCTTGGTC	NM_007707
PTP1B	ACGGCGTACCTGGTCATCTA	CTATGGTAGCTCCCCTTAGCC	NM_023587
UCP1	AAGCTGTGCGATGTCCATGT	AAGCCACAAACCCTTTGAAAA	NM_009463
PGC1a	AGACAAATGTGCTTCCAAAAAGAA	GAAGAGATAAAGTTGTTGGTTTGG	NM_008904
CIDEA	GGTTCAAGGCCGTGTTAAGG	CGTCATCTGTGCAGCATAGG	NM_007702
PRDM16	CCACCAGCGAGGACTTCAC	GGAGGACTCTCGTAGCTCGAA	NM_027504
Pnpla2	CAACGCCACTCACATCTACGG	GGACACCTCAATAATGTTGGCA	NM_001163689
ß3AR	TCCTTCTACCTTCCCCTCCTT	CGGCTTAGCCACAACGAACAC	NM_013462
Ppib	TGGAGAGCACCAAGACAGACA	TGCCGGAGTCGACAATGAT	NM_011149

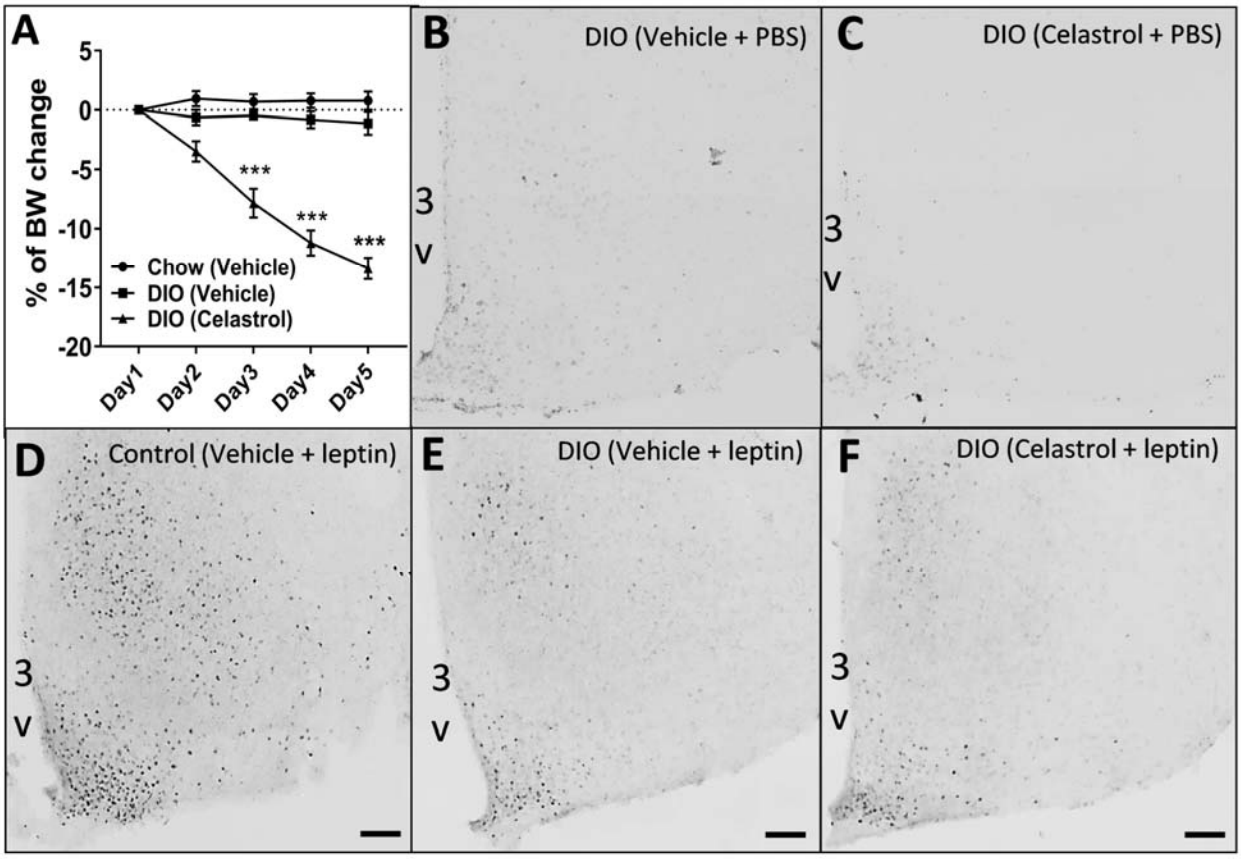
SUPPLEMENTARY DATA

Supplementary Figure S1. Changes of the levels of gene expressions in the liver by celastrol treatment. (A-C) Expression levels of genes involved in ER stress. (D-F) Expression levels of inflammatory cytokine genes. (N=4-6/group). Data are presented as mean ± SEM.



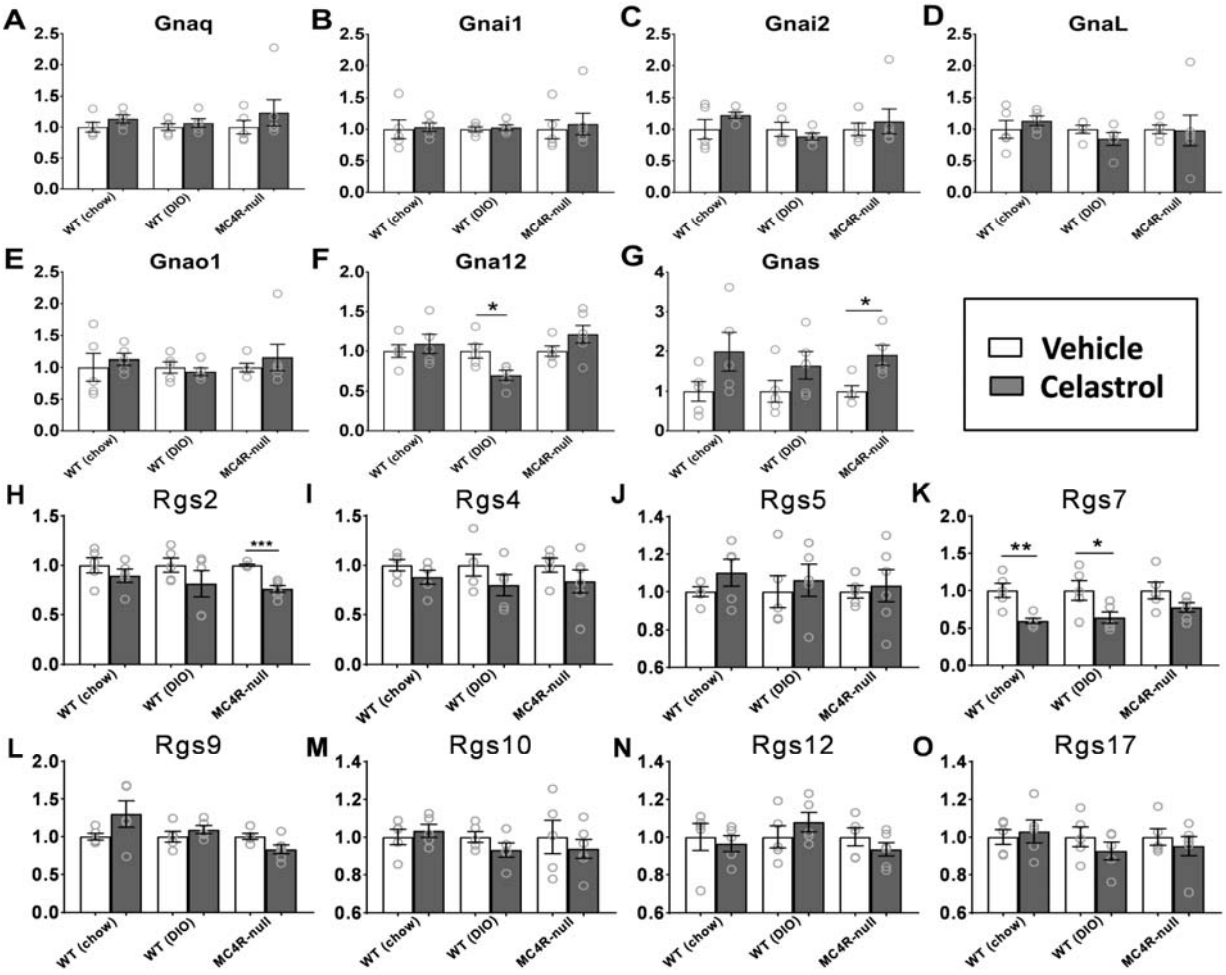
SUPPLEMENTARY DATA

Supplementary Figure S2. Celastrol treatment does not improve blunted leptin-induced pSTAT3 in mediobasal hypothalamus of DIO mice. (A) Five days of systemic Celastrol (IP, 0.5 mg/Kg) drastically reduce body weight in DIO mice (n=3/group). (B, C) Representative images showing baseline pSTAT3 in the mediobasal hypothalamusof DIO mice received either vehicle (B) or Celastrol treatment (C). (D-F) Representative images showing leptin-induced pSTAT3 in mediobasal hypothalamus of vehicle-treated chow-fed control (D and DIO (E) and Celastrol-treated DIO (F) mice. Note that no perceivable improvement of baseline or blunted leptin-induced pSTAT3 in mediobasal hypothalamus of DIO by Celastrol treatment. (N=3/group). ***p<0.0001 vs DIO by two-way ANOVA compared to vehicle group. Data are presented as mean ± SEM.



SUPPLEMENTARY DATA

Supplementary Figure S3. Changes of the levels of gene expressions in the hypothalamus by celastrol. (A-G) Expression levels of genes encoding different G alpha subunits. (E-G) Expression levels of genes encoding different family members of RGS (N=4-6/group). *p<0.05, **<0.01 by Student's t-test (compared to Vehicle group). Data are presented as mean ± SEM.



SUPPLEMENTARY DATA

Supplementary Figure S4. Celastrol treatment reduce ambulatory activity as measured by beam break system. (N=8/group). **p<0.01, ***<0.001 by two-way ANOVA compared to Vehicle group. Data are presented as mean ± SEM.