

Supplementary Materials

Table S1. List of qRT-PCR primers used in this study

Common abbreviation	Forward primer (5'→ 3')	Reverse primer (5'→ 3')
<i>TNF-α</i>	CATCTTCTCAA AATTCGAGTGACA A	TGGGAGTAGACAAGGTACAACCC
<i>IL1B</i>	CGACAAAATACCTGTGGCCT	TTCTTTGGGTATTGCTTGGG
<i>PTP1B</i>	GCGCTTCTCCTACCTGGCTGTCAT	ACGTGCTCGGGTGAAGGTCTA
<i>Socs3</i>	GTGAAGAGGCAGTAGCA	TCTCCTAGCCCCACATAG
<i>IL10</i>	GGTTGCCAAGCCTTATCGGA	ACCTGCTCCACTGCCTTGCT
<i>Iba1</i>	TGATCCCAAATACAGCAATGA TGAG	TCCAGCATTGCTTCA AGGAC
<i>CD11b</i>	CGGAAAGTAGTGAGAGA AACTGTTTC	CTTATAATCCAAGGGATCACCGAATTT
<i>Emr1</i>	AATCGCTGCTGGTTC AATACAG	CCAGGCAAGGAGGACAGAGTT
<i>CD68</i>	CTTCCCACAAGCAGCACAG	AATGATGAGAGGCAGCAAGAGA
<i>GFAP</i>	AACGACTATCGCCGCAACTG	CTCTTCTGTTTCGCGCATTG
<i>GLAST</i>	CTGTTTCGGAATGCCTTCGTT	TCACCTCCCGGTAGCTCATT
<i>cFos</i>	CTGTCAACACACAGGACTTTT	AGGAGATAGCTGCTCTACTTTG
<i>FosB</i>	AGGCAGAGCTGGAGTCGGAGAT	GCCGAGGACTTGA AACTTCACTCG
<i>DAT</i>	TGGCTGTTGGTGTA AAGTGG	CCAAAAGACGGCAATATGGT
<i>TH</i>	TTGAAGGAACGGACTGGCTT	GAAACACACGGAAGGCCAGA
<i>D1R</i>	GTAGCCATTATGATCGTCAC	GATCACAGACAGTGTCTTCAG
<i>D2R</i>	GCAGCCGAGCTTTCAGAGCC	GGGATGTTGCAGTCACAGTG
<i>GAPDH</i>	AGGTCGGTGTGAACGGATTTG	TGTAGACCATGTAGTTGAGGTCA

Table S2. The details of statistics used in this study.

Figure	Panel	Number of samples	Test used	F/t/p value and degrees of freedom (df)	Post hoc test	Significance
2A	Body Weight	WT = 14, KO = 12	Two-way ANOVA assessed by repeated measures	Time: F (13, 312) = 725, p < 0.05 Genotype: F (1, 24) = 0.2696, ns Interaction: F (13, 312) = 0.0505, ns	Sidak's multiple comparison	WT vs KO, ns
2B	Body Weight	WT = 12, KO = 6	Two-way ANOVA assessed by repeated measures	Time: F (1.423, 22.77) = 177.2, p < 0.05 Genotype: F (1, 16) = 0.05773, ns Interaction: F (13, 208) = 0.1827, ns	Sidak's multiple comparison	WT vs KO, ns
2C	Food intake	WT = 13, KO = 14	Unpaired t-test	t = -1.129, df = 25		WT vs KO, ns
2D	Food intake	WT = 7, KO = 6	Unpaired t-test	t = -0.789, df = 11		WT vs KO, ns
2E	Feed efficiency	WT = 13, KO = 14	Unpaired t-test	t = -0.489, df = 25		WT vs KO, ns
2F	Feed efficiency	WT = 7, KO = 6	Unpaired t-test	t = 0.510, df = 11		WT vs KO, ns
2G	Blood Glucose	WT = 7, KO = 11	Unpaired t-test	t = 0.105, df = 16		WT vs KO, ns
2H	Blood Glucose	WT = 11, KO = 5	Unpaired t-test	t = 0.861, df = 14		WT vs KO, ns
2I	White adipose tissue	WT = 7, KO = 10	Unpaired t-test	t = 0.927, df = 15		WT vs KO, ns
2J	White adipose tissue	WT = 11, KO = 5	Unpaired t-test	t = 0.191, df = 14		WT vs KO, ns
4A	Food intake	WT = 6, KO = 8	Two-way ANOVA assessed by repeated measures	Time: F (1.446, 17.35) = 89.76, p < 0.05 Genotype: F (1, 12) = 0.2250, ns Interaction: F (2, 24) = 1.284, ns	Sidak's multiple comparison	WT vs KO, ns
4B	Food intake	WT = 13, KO = 11	Two-way ANOVA assessed by repeated measures	Time: F (1.636, 36) = 128.4, p < 0.05 Genotype: F (1, 22) = 14.34, p < 0.05 Interaction: F (2, 44) = 0.2759, ns	Sidak's multiple comparison	WT vs KO (30 min), p < 0.05 WT vs KO (60 min), p < 0.05 WT vs KO (120 min), p < 0.05
4C	Food intake	WT = 8, KO = 9	Two-way ANOVA assessed by repeated measures	Time: F (1.475, 22.13) = 18.75, p < 0.05 Genotype: F (1, 15) = 0.09574, ns Interaction: F (2, 30) = 0.2240, ns	Sidak's multiple comparison	WT vs KO, ns
4D	Food intake	WT = 12, KO = 10	Two-way ANOVA assessed by repeated measures	Time: F (1.165, 23.30) = 80.04, p < 0.05 Genotype: F (1, 20) = 6.163, p < 0.05 Interaction: F (2, 40) = 7.820, p < 0.06	Sidak's multiple comparison	WT vs KO (30 min), ns WT vs KO (60 min), p < 0.05 WT vs KO (120 min), p < 0.05

4E	pAKT/AKT	CD WT = 7, CD KO = 6 HFD WT =6, HFD KO = 6	Two-way factorial ANOVA	Group: F (1, 21) = 0.3454, p < 0.05 Genotype: F (1, 21) = 41.14, ns Interaction: F (1, 21) = 0.9275, ns	Sidak's multiple comparison	WT-CD vs WT-HFD, p < 0.05 HFD-WT vs HFD-KO, ns
4F	pAKT/AKT	CD WT = 5, CD KO = 6 HFD WT =6, HFD KO = 6	Two-way factorial ANOVA	Group: F (1, 5) = 17.43, p < 0.05 Genotype: F (1, 5) = 2.349, ns Interaction: F (1, 4) = 9.003, p < 0.05	Sidak's multiple comparison	WT-CD vs WT-HFD, p < 0.05 HFD-WT vs HFD-KO, p < 0.05
5A	TNF- α mRNA	WT = 8, KO = 7	Unpaired t-test	t = 2.060, df = 13		WT vs KO, ns
	IL1B mRNA	WT = 8, KO = 8	Unpaired t-test	t = 1.306, df = 14		WT vs KO, ns
	PTP1B mRNA	WT = 8, KO = 7	Unpaired t-test	t = -0.019, df = 13		WT vs KO, ns
	socs3 mRNA	WT = 8, KO = 8	Unpaired t-test	t = 0.183, df = 14		WT vs KO, ns
	IL10 mRNA	WT = 7, KO = 8	Unpaired t-test	t = 0.307, df = 13		WT vs KO, ns
5B	TNF- α mRNA	WT = 7, KO = 6	Unpaired t-test	t = 2.491, df = 10		WT vs KO, p < 0.05
	IL1B mRNA	WT = 7, KO = 7	Unpaired t-test	t = -0.491, df = 12		WT vs KO, ns
	PTP1B mRNA	WT = 7, KO = 7	Unpaired t-test	t = 4.749, df = 12		WT vs KO, p < 0.05
	socs3 mRNA	WT = 7, KO = 7	Unpaired t-test	t = 1.555, df = 6.770		WT vs KO, ns
	IL10 mRNA	WT = 7, KO = 6	Unpaired t-test	t = -2.361, df = 11		WT vs KO, p < 0.05
5C	Iba1 mRNA	WT = 8, KO = 7	Unpaired t-test	t = 2.360, df = 13		WT vs KO, p < 0.05
	CD11b mRNA	WT = 8, KO = 8	Unpaired t-test	t = 1.146, df = 14		WT vs KO, ns
	Emr1 mRNA	WT = 8, KO = 8	Unpaired t-test	t = -0.294, df = 14		WT vs KO, ns
	CD68 mRNA	WT = 8, KO = 8	Unpaired t-test	t = 0.287, df = 14		WT vs KO, ns
	GFAP mRNA	WT = 8, KO = 8	Unpaired t-test	t = 1.180, df = 14		WT vs KO, ns
	GLAST mRNA	WT = 8, KO = 8	Unpaired t-test	t = 0.497, df = 14		WT vs KO, ns
5D	Iba1 mRNA	WT = 6, KO = 6	Unpaired t-test	t = 2.507, df = 10		WT vs KO, p < 0.05
	CD11b mRNA	WT = 7, KO = 7	Unpaired t-test	t = 2.743, df = 12		WT vs KO, p < 0.05
	Emr1 mRNA	WT = 7, KO = 7	Unpaired t-test	t = 0.769, df = 12		WT vs KO, ns
	CD68 mRNA	WT = 7, KO = 7	Unpaired t-test	t = -1.189, df = 12		WT vs KO, ns
	GFAP mRNA	WT = 7, KO = 7	Unpaired t-test	t = 2.640, df = 12		WT vs KO, p < 0.05
	GLAST mRNA	WT = 7, KO = 7	Unpaired t-test	t = 1.620, df = 7.168		WT vs KO, ns
6A	DAT mRNA	WT = 7, KO = 8	Unpaired t-test	t = 2.434, df = 13		WT vs KO, p < 0.05
	cFos mRNA	WT = 7, KO = 6	Unpaired t-test	t = 1.116, df = 11		WT vs KO, ns
	Δ FosB mRNA	WT = 7, KO = 7	Unpaired t-test	t = -0.189, df = 12		WT vs KO, ns
	TH mRNA	WT = 8, KO = 8	Unpaired t-test	t = -0.092, df = 14		WT vs KO, ns
6B	DAT mRNA	WT = 7, KO = 7	Unpaired t-test	t = 5.788, df = 12		WT vs KO, p < 0.05

	cFos mRNA	WT = 7, KO = 7	Unpaired t-test	t = 1.116, df = 12		WT vs KO, ns
	ΔFosB mRNA	WT = 8, KO = 6	Unpaired t-test	t = 0.905, df = 9.238		WT vs KO, ns
	TH mRNA	WT = 7, KO = 6	Unpaired t-test	t = 1.321, df = 11		WT vs KO, ns
6C	DAT mRNA	WT = 6, KO = 5	Unpaired t-test	t = 0.8782, df = 9		WT vs KO, ns
	cFos mRNA	WT = 7, KO = 7	Unpaired t-test	t = 1.705, df = 12		WT vs KO, ns
	ΔFosB mRNA	WT = 7, KO = 7	Unpaired t-test	t = -0.215, df = 12		WT vs KO, ns
	D1R mRNA	WT = 7, KO = 7	Unpaired t-test	t = -2.065, df = 12		WT vs KO, ns
	D2R mRNA	WT = 7, KO = 7	Unpaired t-test	t = -1.016, df = 12		WT vs KO, ns
6D	DAT mRNA	WT = 6, KO = 7	Unpaired t-test	t = 0.2764, df = 11		WT vs KO, ns
	cFos mRNA	WT = 8, KO = 8	Unpaired t-test	t = -0.932, df = 14		WT vs KO, ns
	ΔFosB mRNA	WT = 8, KO = 8	Unpaired t-test	t = -0.499, df = 14		WT vs KO, ns
	D1R mRNA	WT = 7, KO = 8	Unpaired t-test	t = 0.410, df = 13		WT vs KO, ns
	D2R mRNA	WT = 7, KO = 8	Unpaired t-test	t = -0.211, df = 13		WT vs KO, ns
6E	DAT mRNA	WT = 7, KO = 6	Unpaired t-test	t = 1.486, df = 11		WT vs KO, ns
	cFos mRNA	WT = 7, KO = 6	Unpaired t-test	t = 2.530, df = 11		WT vs KO, p < 0.05
	ΔFosB mRNA	WT = 7, KO = 7	Unpaired t-test	t = 0.165, df = 12		WT vs KO, ns
	D1R mRNA	WT = 7, KO = 6	Unpaired t-test	t = -1.685, df = 11		WT vs KO, ns
	D2R mRNA	WT = 7, KO = 7	Unpaired t-test	t = -0.211, df = 12		WT vs KO, ns
6F	DAT mRNA	WT = 8, KO = 7	Unpaired t-test	t = 2.398, df = 12		WT vs KO, p < 0.05
	cFos mRNA	WT = 7, KO = 7	Unpaired t-test	t = 2.599, df = 12		WT vs KO, p < 0.05
	ΔFosB mRNA	WT = 8, KO = 7	Unpaired t-test	t = 2.186, df = 13		WT vs KO, p < 0.05
	D1R mRNA	WT = 8, KO = 7	Unpaired t-test	t = 2.163, df = 13		WT vs KO, p < 0.05
	D2R mRNA	WT = 8, KO = 7	Unpaired t-test	t = 2.304, df = 13		WT vs KO, p < 0.05

Figure S1. Visual appearance of the stomachs of mice after binge-like eating



**The stomach of mouse
before refeeding of HFD**



**The stomach of mouse
after 2h HFD-refeeding**

Figure S2. Uncropped images of Western Blots

Figure 4E

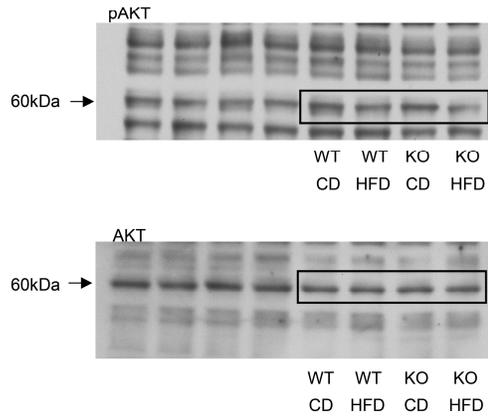


Figure 4F

