

Table S1. Detailed information of the mouse diet

Product	XTCON50J		XTHF60		XTHF60 (5% buckwheat)		XTHF60 (10% buckwheat)		XTHF60 (20% buckwheat)	
Nutrients	gm%	Kcal%	gm%	Kcal%	gm%	Kcal%	gm%	Kcal%	gm%	Kcal%
Protein	19.2	20.0	26.0	20.0	26.0	20.0	26.0	20.0	26.0	20.0
Carbohydrate	67.3	70.0	26.0	20.0	26.0	20.0	26.0	20.0	26.0	20.0
Fat	4	10.0	35	60.0	35	60.0	35	60.0	35	60.0
Total		100.0		100.0		100.0		100.0		100.0
Kcal/gm	3.85		5.24		5.24		5.24		5.24	
Ingredient	gm	Kcal	gm	Kcal	gm	Kcal	gm	Kcal	gm	Kcal
Casein	200.0	800.0	200.0	800.0	195.4	781.4	190.7	762.9	181.4	725.8
L-Cystine	3.0	12.0	3.0	12.0	3.0	12.0	3.0	12.0	3.0	12.0
Corn Starch	506.200	2025	0.000	0	0.000	0	0.000	0	0.000	0
Maltodextrin 10	125	500	125	500	95	380	65	259	5	18
Sucrose	68.800	275	68.800	275	68.800	275	68.800	275	68.800	275
Buckwheat Fat (2%)					0.774	7	1.548	14	3.095	28
Buckwheat Protein (12%)					4.640	19	9.280	37	18.560	74
Buckwheat Starch (70%)					27.000	108	54.000	216	108.000	432
Buckwheat Fiber (8%)					3.100	0	6.200	0	12.400	0
Other Buckwheat Substances (8%)					3.100	0	6.200	0	12.400	0
Cellulose	50	0	50	0	47	0	44	0	38	0
Soybean Oil	25	225	25	225	24	218	23	211	22	197
Lard	20	180	245	2205	245	2205	245	2205	245	2205
Mineral Mix S10026	10.0		10.0		10.0		10.0		10.0	
DiCalcium Phosphate	13.0		13.0		13.0		13.0		13.0	
Calcium Carbonate	5.5		5.5		5.5		5.5		5.5	
Potassium Citrate, 1 H2O	16.5		16.5		16.5		16.5		16.5	
Vitamin Mix V10001	10.0	40	10.0	40	10.0	40	10.0	40	10.0	40
Choline Bitartrate	2.0		2.0		2.0		2.0		2.0	
<b>Total</b>	<b>1055</b>	<b>4057</b>	<b>773.80</b>	<b>4057</b>	<b>773.80</b>	<b>4045</b>	<b>773.80</b>	<b>4032</b>	<b>773.80</b>	<b>4008</b>

**Table S2.** Primer sequences for qRT-PCR

Gene	Forward primer (5'→3')	Reverse primer (5'→3')
<i>Pparg</i>	CCAGCATTTCTGCTCCACAC	ATTCTTGGAGCTTCAGGCCA
<i>Pgc1a</i>	AGCCGTGACCACTGACAACGAG	GCTGCATGGTTCTGAGTGCTAAG
<i>Acc</i>	GGCAGCAGTTACACCACATAC	TCATTACCTCAATCTCAGCATAGC
<i>Il-6</i>	ACTTCCATCCAGTTGCCTTCTTG	TGTTGGGAGTGGTATCCTCTGTG
<i>Fas</i>	GCTGCGGAAACTTCAGGAAAT	AGAGACGTGTCACTCCTGGACTT
<i>Ppara</i>	TGCAGCCTCAGCCAAGTTGAA	TCCCGAACTTGACCAGCCA
<i>Srebp1c</i>	CTGGTGAGTGGAGGGACCAT	GACCGGTAGCGCTTCTCAAT
<i>Lxra</i>	TCAGAAGAACAGATCCGCTTG	CGCCTGTTACACTGTTGCT
<i>β-actin</i>	ACAGCAGTTGGTTGGAGCAA	ACGCGACCATCCTCCTCTTA

*Pparg*, peroxisome proliferator-activated receptor  $\gamma$ 1; *Pgc1a*, peroxisome proliferator-activated receptor c coactivator 1 $\alpha$ ; *Acc*, acetyl-CoA carboxylase; *Il-6*, interleukin-6; *Fas*, fatty acid synthase; *Ppara*, peroxisome proliferator-activated receptor alpha; *Srebp1c*, sterol regulatory element-binding protein-1c; *Lxra*, liver X receptors  $\alpha$ ;