



**Fig. S1** Animal experiment design

**Table S1** The compositions and energy ratio of high-fat diet and normal diet

Component (g/1000 g)	H10010	H10060
casein	189.58	258.45
dicysteine	2.84	3.88
corn starch	289.59	0
maltodextrin	33.18	161.53
sucrose	331.77	88.91
fibrin	47.40	64.61
soybean oil	23.70	32.31
lard	18.96	316.60
M1002 Mineral mixture	9.48	12.92
calcium hydrogen phosphate	12.32	16.8
Calcarea carbonica	5.21	7.11
Sodium-potassium	15.64	21.32
V1001 Vitamin mixture	9.48	12.92
choline bitartrate crystalline	1.90	2.58
edible grade blue dye	0	0.065
edible grade yellow dye	0.047	0

**Table S2** Primer sequence

Gene	Forward 5'-3' Primer Sequence	Reverse 5'-3'Primer Sequence
$\beta$ -actin	5'-GCTCTGGCTCCTAGCACCAT-3'	5'-GCCACCGATCCACACAGAGT-3'
TLR4	5'-TAGCCATTGCTGCCAACATC-3'	5'-CCTCAGCAGGGACTTCTCAA-3'
TNF- $\alpha$	5'-CCAGCCGATGGGTTGTACCT-3'	5'-TGACGGCAGAGAGGAGGTTG-3'
IL-10	5'-AGAGAAGCATGGCCAGAAA-3'	5'-ACACCTTGGTCTTGAGCTT-3'
IL-6	5'-CTGCAAGAGACTTCCATCCAG-3'	5'-AGTGGTATAGACAGGTCTGTTGG-3'