

**Sterol sulfate alleviates atherosclerosis via mediating hepatic cholesterol metabolism in
ApoE^{-/-} mice**

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Supporting information Table S1. Composition of experimental diet for apoE^{-/-} mice (g/kg)

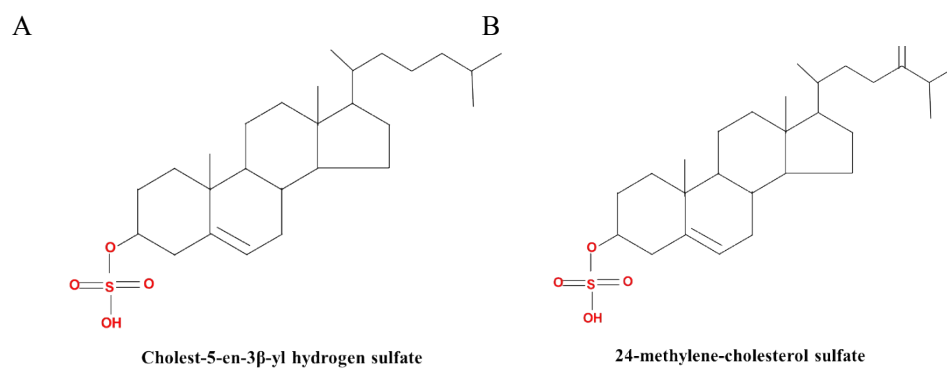
Ingredient	Model	SCS
Corn starch	250	245
Sucrose	250	250
Casein	150	150
Lard	200	200
Corn oil	50	50
Cellulose	50	50
Mineral mix ^a	35	35
Vitamin mix ^b	10	10
L-Cystine	3	3
Choline bitartrate	2	2
t-Buthlhydroquinone	0.008	0.008
SCS	0	5

^a AIN-93M mineral mix.

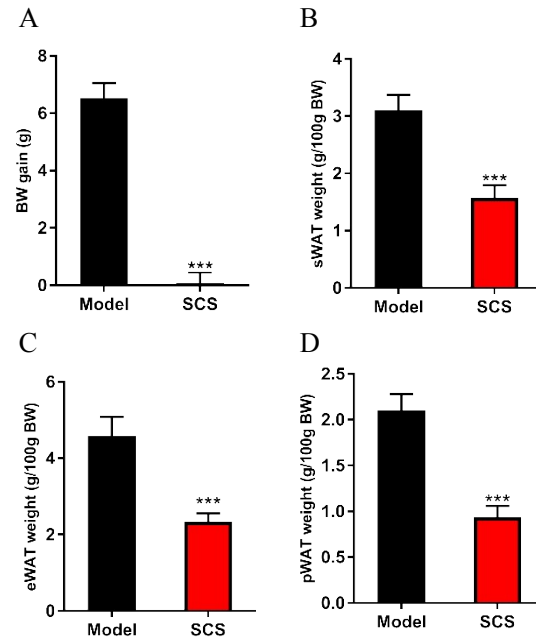
^b AIN-93M vitamin mix.

Supporting information Table S2. Primer sequences

Gene	Forward and reverse primers	Gene	Forward and reverse primers
<i>Nr1h3</i>	f: 5'-GAGCCGACAGAGCTTCGTC-3' r: 5'-GCGTGCTCCCTTGATGACA-3'	<i>Cyp7b1</i>	f: 5'-TAGCCCTCTTTCCTCCACTCATA-3' r: 5'-GAACCGATCGAACCTAAATTCCT-3'
<i>Abca1</i>	f: 5'-GCTGCAGGAATCCAGAGAAT-3' r: 5'-CATGCACAAGGTCCTGAGAA-3'	<i>Cyp8b1</i>	f: 5'-GGCTGGCTTCCTGAGCTTATT-3' r: 5'-ACTTCCTGAACAGCTCATCGG-3'
<i>Abcg8</i>	f: 5'-GACATCTGGCACCCCTATCTAC-3' r: 5'-GTTCCCTTTGCCTCAGCTTTC-3'	<i>Cyp27a1</i>	f: 5'-GCCTCACCTATGGGATCTTCA-3' r: 5'-TCAAAGCCTGACGCAGATG-3'
<i>Abcg5</i>	f: 5'-TCTCCGCGTCCAGAACAAAC-3' r: 5'-CATTGAGCATGCCGGTGTAT-3'	<i>Baat</i>	f: 5'-GGAAACCTGTTAGTTCTCAGGC-3' r: 5'-GTGGACCCCATATAGTCTCC-3'
<i>Srebf2</i>	f: 5'-CTGCAGCCTCAAGTGCAAAG-3' r: 5'-CAGTGTGCCATTGGCTGTCT-3'	<i>Slc27a5</i>	f: 5'-ACCCTGGATCAGCTCCTGGAT-3' r: 5'-GTTCTCAGCTAGCAGCTTGG-3'
<i>Hmgcr</i>	f: 5'-GGCTGGTGAGTTGTCCTTGAT-3' r: 5'-TCTAAAGAGCCAGAAACCAAGC-3'	<i>Abcc2</i>	f: 5'-GGATGGTGACTGTGGGCTGAT-3' r: 5'-GGCTGTTCTCCCTTCTCATGG-3'
<i>Acat2</i>	f: 5'-GCCTTCGCCGAGATGCT-3' r: 5'-GTAGTTGGAGAAGGAAGTCGAGTTC-3'	<i>Abcc3</i>	f: 5'-TCCCACTTTTCGGAGACAGTAAC-3' r: 5'-ACTGAGGACCTTGAAGTCTTGGA-3'
<i>Ldlr</i>	f: 5'-TTGGACAACAATGGTGGCTGTTCC-3' r: 5'-TTGCAGACCCTGGTGTGAGG-3'	<i>Abcb11</i>	f: 5'-CTGCCAAGGATGCTAATGCA-3' r: 5'-CGATGGCTACCCTTTGCTTCT-3'
<i>Vldlr</i>	f: 5'-GTGTACTTGAAGACCACTGAAGAG-3' r: 5'-GCTGGCTCTGTTACCATTTC-3'	<i>Slc10a1</i>	f: 5'-ATGACCACCTGCTCCAGCTT-3' r: 5'-GCCTTTGTAGGGCACCTTGT-3'
<i>Cyp7a1</i>	f: 5'-AGCAACTAAACAACCTGCCAGTACTA-3' r: 5'-GTCCGGATATTCAAGGATGCA-3'	<i>18S</i>	f: 5'-CAGGCATTGCTGACAGGATG-3' r: 5'-TGCTGATCCACATCTGCTGG-3'



Supporting information Figure S1. Chemical structures of sea cucumber-derived sterol sulfate (A, B).



Supporting information Figure S2. Sea cucumbers-derived sterol sulfate (SCS) reduced WAT weight in ApoE^{-/-} mice (n=8). BW gain (A), sWAT (B), eWAT (C), pWAT (D) weight per 100g BW was analyzed. BW, body weight; WAT, white adipose tissue; sWAT, subcutaneous WAT; eWAT, epididymal WAT; pWAT, perirenal WAT. Data were presented as mean $\pm$ SEM. ****P* < 0.001 determined by ANOVA (Tukey's test).