

Supporting information

Dietary methionine restriction ameliorates atherosclerosis by remodeling gut microbiota in apolipoprotein E-knockout mice

Hao Yang,^a Yuhui Yang,^{a,b,*} Guifang Cui,^a Yuncong Xu,^{a,c} Renyong Zhao,^a Guowei Le,^c

Yanli Xie^a and Peng Li^b

^a Henan Key Laboratory of Cereal and Oil Food Safety and Nutrition, College of Food Science and Engineering, Henan University of Technology, Zhengzhou 450001, Henan, China

^b Institute for Complexity Science, Henan University of Technology, Zhengzhou 450001, Henan, China

^c School of Food Science and Technology, Jiangnan University, Wuxi 214122, Jiangsu, China

* Corresponding author:

Yuhui Yang, yangyuhui1992@126.com

College of Food Science and Engineering, Henan University of Technology

100 Lotus Street, Hi-tech Development District, Zhengzhou, Henan, 450001, China

Supplemental Tables

Table S1. The compositions of the experimental diets (g/100g)

Ingredient	ND	AS	AS+MR
L-Arginine	1.12	1.12	1.12
L-Histidine	0.33	0.33	0.33
L-Isoleucine	0.82	0.82	0.82
L-Leucine	1.11	1.11	1.11
L-Lysine	1.44	1.44	1.44
L-Methionine	0.86	0.86	0.17
L-Phenylalanine	1.16	1.16	1.16
L-Threonine	0.82	0.82	0.82
L-Tryptophan	0.18	0.18	0.18
L-Valine	0.82	0.82	0.82
L-Glutamic acid	2.7	2.7	3.39
L-Glycine	2.33	2.33	2.33
Corn starch	47.11	29.81	29.81
Maltodextrin	5	5	5
Sucrose	20	20	20
Cellulose	5	5	5
Soybean oil	2.5	2.5	2.5
Pork Lard	2	17.5	17.5

Cholesterol	0	1	1
Mineral mix ¹	3.5	3.5	3.5
Vitamin mix ¹	1	1	1
Choline chloride	0.2	1	1
Total	100.00	100.00	100.00

¹ Mineral mix and Vitamin mix were prepared based on the AIN-93 diet.

Table S2. Sequences of primers used for quantitative real-time polymerase chain reaction

Genes	Forward (5'–3')	Reverse (5'–3')
<i>Nrf2</i>	AGCACATCCAGACAGACACCAGT	TTCAGCGTGGCTGGGGATAT
<i>Keap1</i>	GATGGGCAGGACCAGTTGAA	CCGAGGACGTAGATCTTGCC
<i>HO-1</i>	GAATTCAGCTTGCCACAGGAATTG	TCTACACTAGCTGCATGTTGA
<i>NQO-1</i>	AGGATGGGAGGTACTCGAATC	AGGCGTCCTTCCTTATATGCTA
<i>IL-6</i>	ACACACTGGTTCTGAGGGAC	TACCACAAGGTTGGCAGGTG
<i>IL-1β</i>	GAAATGCCACCTTTTGACAGTG	TGGATGCTCTCATCAGGACAG
<i>TNF-α</i>	CTGAACTTCGGGGTGATCGGT	TCCTCCACTTGGTGGTTTGCTAC
<i>IL-10</i>	CATTCATGGCCTTG TAGACACC	CTTAATGCAGGACTTAAGGGTTA
<i>MCP-1</i>	CCACTCACCTGCTGCTACTCA	TGGTGATCCTCTTG TAGCTCTCC
<i>VCAM-1</i>	AGTTGGGGATTCGGTTGTTCT	CCCCTCATTCCTTACCACCC
<i>ICAM-1</i>	GTGATGCTCAGGTATCCATCCA	CACAGTTCTCAAAGCACAGCG
<i>E-selectin</i>	ATGAAGCCAGTGCATACTGTC	CGGTGAATGTTTCAGATTGGAGT

<i>SR-A1</i>	CGCACGTTCAATGACAGCATCC	GCAAACACAAGGAGGTAGAGAGC
<i>CD36</i>	GGACATTGAGATTCTTTTCCTCTG	GCAAAGGCATTGGCTGGAAGAAC
<i>CD68</i>	CCATCCTTCACGATGACACCT	GGCAGGGTTATGAGTGACAGTT
<i>F4/80</i>	CCCCAGTGTCTTACAGAGTG	GTGCCCAGAGTGGATGTCT
<i>GPR41</i>	CTTCTTTCTTGGCAATTACTGGC	CCGAAATGGTCAGGTTTAGCAA
<i>GPR43</i>	CGTTGGGGCTCAGAGGCGAC	TGCTCGGGAAGATCCGGGGG
<i>HDAC3</i>	GCCAAGACCGTGGCGTATT	GTCCAGCTCCATAGTGAAGT
<i>β-actin</i>	GGCTGTATTCCCTCCATCG	CCAGTTGGTAACAATGCCATG

Nrf2, nuclear factor erythroid-2-related factor 2; *Keap 1*, Kelch-like ECH-associated protein 1; *HO-1*, heme oxygenase 1; *NQO-1*, NADH-quinone oxidoreductase-1; *IL-6*, interleukin 6; *IL-10*, interleukin 10; *IL-1 β* , interleukin 1 β ; *TNF- α* , tumor necrosis factor- α ; *MCP-1*, monocyte chemotactic protein-1; *VCAM-1*, vascular cell adhesion molecule-1; *ICAM-1*, intercellular cell adhesion molecule-1; *SR-A1*, class A1 scavenger receptor; *CD36*, cluster differentiation 36; *GPR41*, G-protein-coupled receptor-41; *GPR43*, G-protein-coupled receptor-43; *HDAC3*, histone deacetylase 3.