

Supplementary Materials for
**Modulation effect of yogurt fermented with
folate-producing lactic acid bacteria on gut
dysbacteriosis of folate deficient rat**

Jian Zhang ^a, Dongyan Cai ^a, Ming Yang ^a, Yijiang Hao ^a, Yuanhua Zhu ^a, Tariq Aziz

^a, Abid Sarwar ^a, Zhennai Yang ^{a*}

^a Beijing Advanced Innovation Center for Food Nutrition and Human Health, Beijing Engineering and Technology Research Center of Food Additives, Beijing Technology and Business University, Beijing 100048, China

This file includes:

Supplementary Figure S1, Table S1 to S3.

* Corresponding author: Tel.: +86 10 68984870; Fax: +86 10 68985456; Email:

yangzhennai@th.btbu.edu.cn

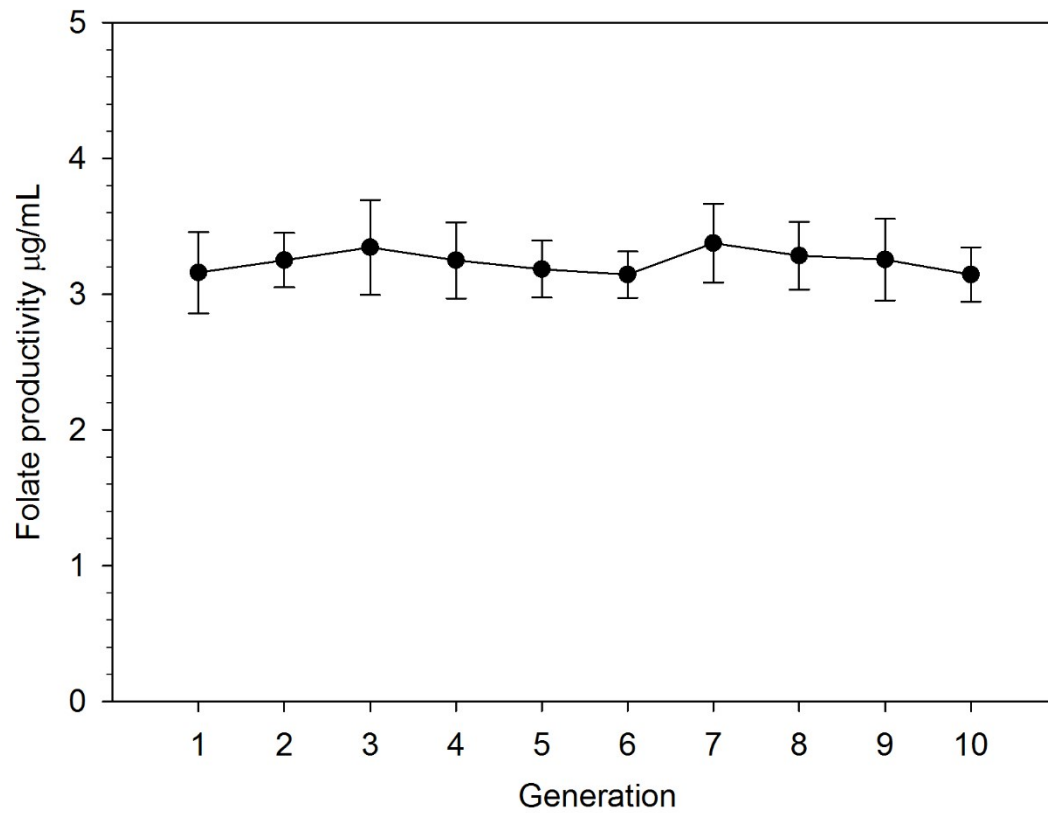


Figure S1. The folate productivity of *L. plantarum* GSLP-7V in milk in the 10-generation successive cultivation. Error bar represents the standard deviation. Values between the generations are not significant ($P < 0.05$)

Table S1 Information of the strains

Species of strain	Strain number	Isolation source	GenBank accession number
	GSLP-7	Kefir	GCA_003020005.1
<i>Lactobacillus</i>	YW11	Kefir	GCA_004028295.1
<i>plantarum</i>	YW32	Kefir	GCA_004123035.1
(<i>L. plantarum</i>)	B-1	Kefir	GCA_004122965.1
	SKT-109	Kefir	GCA_004025165.1
<i>Lactobacillus</i>	YNF-5	Kefir	GCA_004122955.1
<i>bulgaricus</i>	KW14-3	Kefir	GCA_004123065.1
(<i>L. bulgaricus</i>)			
<i>Lactobacillus lactis</i>			
subsp. <i>lactis</i>	XZ3303	Kefir	GCA_004123095.1
(<i>L. lactis</i> subsp. <i>lactis</i>)			
<i>Lactobacillus lactis</i>			
subsp. <i>cremoris</i>	QH27-1	Kefir	GCA_004123105.1
(<i>L. lactis</i> subsp. <i>cremoris</i>)			
<i>Pediococcus</i>			
<i>pentosaceus</i>	6-1	Kefir	GCA_004115445.1
(<i>P. pentosaceus</i>)			
<i>Lactobacillus</i>			
<i>rhamnosus</i>	5-1	Kefir	GCA_004122925.1
(<i>L. rhamnosus</i>)			
<i>Lactobacillus casei</i>			
(<i>L. casei</i>)	6117	Kefir	GCA_004123005.1

“-” unregistered in NCBI database

Table S2 Rat diet composition^a

Ingredients (g/kg)	with folate	folate free
L-Arginine	6	6
L-Histidine-HCl-H ₂ O	4.6	4.6
L-Isoleucine	7.6	7.6
L-Leucine	15.8	15.8
L-Lysine-HCl	13.2	13.2
L-Methionine	5.1	5.1
L-Phenylalanine	8.4	8.4
L-Threonine	7.2	7.2
L-Tryptophan	2.1	2.1
L-Valine	9.3	9.3
L-Alanine	5.1	5.1
L-Asparagine-H ₂ O	6.7	6.7
L-Aspartate	5.4	5.4
L-Cystine	4.2	4.2
L-Glutamic Acid	21.7	21.7
L-Glutamine	16.5	16.5
Glycine	3	3
L-Proline	17.8	17.8
L-Serine	10	10
L-Tyrosine	9.2	9.2
Total L-Amino Acids	178.9	178.9
Corn Starch	397.486	397.486
Maltodextrin	132	132
Sucrose	107.0777	107.0777
Cellulose	50	50
Soybean	70	70
t-butylhydroquinone	0.014	0.014
Mineral Mix S10022C	3.5	3.5
Calcium Carbonate	7.34	7.34
Potassium Citrate	2.4773	2.4773
Potassium Phosphate, Monobasic	6.86	6.86
Calcium Phosphate, dibasic	7	7
Sodium Chloride	2.59	2.59
Sodium Bicarbonate	7.5	7.5
Folic acid (ppm)	2	0

^a design according to the standard of AIN-93G.

Table S3 Factor loadings of PC1 and PC2 coordinates

Genus	PC1	PC2
Actinomyces	0.641	0.185
Adlercreutzia	0.076	0.627
Akkermansia	0.131	0.019
Allobaculum	-0.203	0.475
Anaeroplasma	-0.242	-0.565
Anaerotruncus	-0.069	0.623
Bacteroides	-0.608	-0.257
Blautia	-0.529	0.160
Butyricicoccus	-0.253	0.240
Christensenella	-0.151	0.106
Clostridium	-0.471	-0.535
Coprobacillus	-0.233	0.237
Coprococcus	-0.347	0.677
Dehalobacterium	-0.109	0.527
Dorea	-0.342	0.526
Eggerthella	-0.218	-0.543
Enterococcus	0.252	-0.416
Epulopiscium	-0.326	-0.350
Eubacterium	-0.561	-0.232
Gemella	0.738	0.170
Helicobacter	-0.209	-0.231
Holdemania	-0.503	-0.207
Lactobacillus	0.751	-0.173
Oscillospira	-0.360	0.549
p_75_a5	-0.028	0.515
Parabacteroides	-0.277	0.033
Peptostreptococcus	0.226	0.483
Pseudoramibacter_Eubacterium	-0.175	0.086
rc4_4	-0.374	0.288
Roseburia	-0.326	0.226
Rothia	0.708	0.079
Ruminococcus	-0.223	-0.107
Shuttleworthia	-0.210	0.021
SMB53	-0.548	-0.406
Staphylococcus	0.758	0.046
Streptococcus	0.271	0.378
Sutterella	-0.456	0.245
Turicibacter	0.347	-0.377
V2	-0.429	0.409