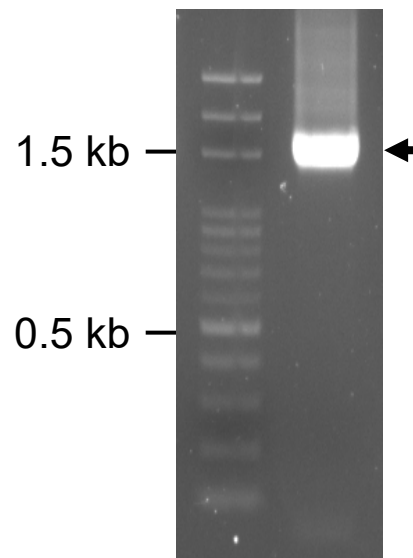


**Supplementary Table S1.** Composition of experimental diets.

	Normal chow diet <sup>1</sup>	High fat diet
Ingredient (g/100 g)		
Chow	100.0	54.0
Soybean oil	-	4.8
Condensed milk <sup>2</sup>	-	28.5
Lard	-	12.7
Carbohydrate (%)	48.7	41.7
Fat (%)	5.0	22.5
Protein (%)	23.9	15.0
Energy <sup>3</sup> (kcal/g)	3.4	4.3

<sup>1</sup> Chow (PMI Nutrition International, St Louis, MO, USA) contained crude protein (23.9 g/100 g), crude lipid (5.0 g/100 g), and carbohydrate (48.7 g/100 g). <sup>2</sup> Condensed milk contained crude protein (7.3 g/100 g), crude lipid (8.2 g/100 g), and carbohydrate (54.5 g/100 g). <sup>3</sup> Energy (kcal/g) = (carbohydrate % ×4 + fat % ×9 + protein % ×4)/100.

(A)



(B)


Primer	Sequence	Reference
fD1	5'-AGAGTTTGATCCTGGCTCAG-3'	[1]
rP1	5'-ACGGTTACCTTGTTACGACTT-3'	[1]

**Supplementary Figure S1.** (A) Agarose gel electrophoresis of the amplified target of 16S rRNA gene from *Bacillus coagulans* BACO-17, and (B) the primers used for 16S rRNA gene analysis.

(A)

TGCAAGTCGTGCGGACCTTTTAAAAGCTTGCTTTTAAAAGGTTAGCGGCGGA  
CGGGTGAGTAACACGTGGGCAACCTGCCTGTAAGATCGGGATAACGCCGGG  
AAACCGGGGCTAATACCGGATAGTTTTTCTCCGCATGGAGGAAAAAGGA  
AAGACGGCTTCTGCTGTCACTTACAGATGGGCCCCGCGGCGCATTAGCTAGTT  
GGTGGGGTAACGGCTCACCAAGGCAACGATGCGTAGCCGACCTGAGAGGGT  
GATCGGCCACATTGGGACTGAGACACGGCCCAAACCTCCTACGGGAGGCAGC  
AGTAGGGAATCTTCCGCAATGGACGAAAGTCTGACGGAGCAACGCCGCGTG  
AGTGAAGAAGGCCTTCGGGTCGTAAAACCTCTGTTGCCGGGGAAGAACAAGT  
GCCGTTTCGAACAGGGCGGCGCCTTGACGGTACCCGGCCAGAAAGCCACGGC  
TAACTACGTGCCAGCAGCCGCGGTAATACGTAGGTGGCAAGCGTTGTCCGG  
AATTATTGGGCGTAAAGCGCGCGCAGGCGGCTTCTTAAGTCTGATGTGAAAT  
CTTGCGGCTCAACCGCAAGCGGTCATTGGAACTGGGAGGCTTGAGTGCAG  
AAGAGGAGAGTGGAATTCCACGTGTAGCGGTGAAATGCGTAGAGATGTGGA  
GGAACACCAGTGGCGAAGGCGGCTCTCTGGTCTGTAACCTGACGCTGAGGCG  
CGAAAGCGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTA  
AACGATGAGTGCTAAGTGTTAGAGGGTTTCCGCCCTTTAGTGCTGCAGCTAA  
CGCATTAAGCACTCCGCCT

(B)

Descriptions	Graphic Summary	Alignments	Taxonomy					
Sequences producing significant alignments								
Download <span>▼</span> Select columns <span>▼</span> Show <span>100</span> <span>▼</span> 								
<input checked="" type="checkbox"/> select all    100 sequences selected <a href="#">GenBank</a> <a href="#">Graphics</a> <a href="#">Distance tree of results</a> <a href="#">MSA Viewer</a>								
Description	Scientific Name	Max Score	Total Score	Query Cover	E value	Per. Ident	Acc. Len	Accession
<input checked="" type="checkbox"/> <a href="#">Weizmannia coagulans strain 1903 16S ribosomal RNA gene, partial...</a>	<a href="#">Weizmann...</a>	1550	1550	100%	0.0	100.00%	1462	<a href="#">MT626076.1</a>
<input checked="" type="checkbox"/> <a href="#">Weizmannia coagulans strain 2274 16S ribosomal RNA gene, partial...</a>	<a href="#">Weizmann...</a>	1550	1550	100%	0.0	100.00%	1442	<a href="#">MT604752.1</a>
<input checked="" type="checkbox"/> <a href="#">Weizmannia coagulans strain 683 16S ribosomal RNA gene, partial s...</a>	<a href="#">Weizmann...</a>	1550	1550	100%	0.0	100.00%	1463	<a href="#">MT585444.1</a>
<input checked="" type="checkbox"/> <a href="#">Weizmannia coagulans strain 1233 16S ribosomal RNA gene, partial...</a>	<a href="#">Weizmann...</a>	1550	1550	100%	0.0	100.00%	1454	<a href="#">MT573683.1</a>
<input checked="" type="checkbox"/> <a href="#">Weizmannia coagulans strain 573 16S ribosomal RNA gene, partial s...</a>	<a href="#">Weizmann...</a>	1550	1550	100%	0.0	100.00%	1440	<a href="#">MT573133.1</a>
<input checked="" type="checkbox"/> <a href="#">Weizmannia coagulans strain 4093 16S ribosomal RNA gene, partial...</a>	<a href="#">Weizmann...</a>	1550	1550	100%	0.0	100.00%	1455	<a href="#">MT544672.1</a>
<input checked="" type="checkbox"/> <a href="#">Weizmannia coagulans strain 8177 16S ribosomal RNA gene, partial...</a>	<a href="#">Weizmann...</a>	1550	1550	100%	0.0	100.00%	1440	<a href="#">MT538925.1</a>
<input checked="" type="checkbox"/> <a href="#">Weizmannia coagulans strain 7163 16S ribosomal RNA gene, partial...</a>	<a href="#">Weizmann...</a>	1550	1550	100%	0.0	100.00%	1418	<a href="#">MT516014.1</a>
<input checked="" type="checkbox"/> <a href="#">Weizmannia coagulans strain 6911 16S ribosomal RNA gene, partial...</a>	<a href="#">Weizmann...</a>	1550	1550	100%	0.0	100.00%	1417	<a href="#">MT463969.1</a>
<input checked="" type="checkbox"/> <a href="#">Weizmannia coagulans strain 6593 16S ribosomal RNA gene, partial...</a>	<a href="#">Weizmann...</a>	1550	1550	100%	0.0	100.00%	1457	<a href="#">MT463837.1</a>

note: *Weizmannia coagulans* is the validated name of *Bacillus coagulans*.

**Supplementary Figure S2.** Bacterial identification of *Bacillus coagulans* BACO-17. (A)

Partial sequence of 16S rRNA gene, and (B) top listed BLAST results.



**Supplementary Figure S3.** Visceral fat mass (A) perirenal fat, (B) mesenteric fat, and (C) epididymal fat among different groups.

## References

1. Weisburg, W. G.; Barns, S. M.; Pelletier, D. A.; Lane, D. J. 16S ribosomal DNA amplification for phylogenetic study. *J. Bacteriol.* **1991**, *173*, 697-703, doi: 10.1128/jb.173.2.697-703.1991.