

Supplementary Materials

Associations of probiotic fermented milk (PFM) and classic yogurt consumption with *Bifidobacterium* and *Lactobacillus* components the gut microbiota in healthy adults

Table S1. Relative abundance (%; median (IQR)) of bacterial phyla in PFM groups.

% Relative abundance	PFM groups		<i>p</i> value*	FDR critical value
	Nonconsumers (175)	Consumers (85)		
Firmicutes [#]				
Men	60.21 (54.09–67.66)	63.87 (57.65–72.29)	0.089	0.075
Women	58.97 (53.12–64.46)	56.45 (48.59–61.69)	0.057	0.037
Bacteroidetes	24.16 (18.05–30.70)	23.32 (15.49–34.07)	0.787	0.085
Proteobacteria [#]				
Men	4.898 (3.903–5.750)	4.274 (3.132–5.489)	0.065	0.050
Women	5.332 (4.240–6.480)	4.782 (4.079–6.580)	0.269	0.100
Actinobacteria	1.987 (0.988–3.989)	2.575 (1.380–5.190)	0.017	0.028
Cyanobacteria	0.298 (0.195–0.498)	0.284 (0.168–0.671)	0.579	0.057
Verrucomicrobia	0.190 (0.011–0.938)	0.156 (0.008–1.213)	0.899	0.100
Tenericutes	0.115 (0.069–0.228)	0.075 (0.053–0.129)	<0.001	0.014
Synergistetes	0.077 (0.038–0.125)	0.0723 (0.038–0.097)	0.282	0.042
Spirochaetes [#]				
Men	0.006 (0.003–0.013)	0.009 (0.005–0.019)	0.045	0.025
Women	0.008 (0.005–0.017)	0.016 (0.006–0.020)	0.026	0.012
Acidobacteria	0.007 (0.001–0.006)	0.003 (0.001–0.006)	0.770	0.070
Fusobacteria [#]				
Men	0.002 (0.001–0.005)	0.002 (0.007–0.003)	0.073	0.062
Women	0.003 (0.001–0.005)	0.004 (0.002–0.008)	0.097	0.087

*PFM consumption effect according to Mann–Whitney U test. Those variables whose *p* values were lower than their FDR critical value were considered significant.

[#] Gender significantly affected the taxa relative abundance.

Table S2. Relative abundance (%; median (IQR)) of the main bacterial genera (>0.5%), and those low-abundance genera (below 0.5%) showing significant differences between PFM groups.

% Relative abundance	PFM groups			
	Nonconsumers (175)	Consumers (85)	<i>p</i> value*	FDR critical value
<i>Bacteroides</i>	12.67 (7.790-19.73)	13.75 (6.947-19.60)	0.894	0.089
<i>Blautia</i>	7.956 (6.199-9.767)	7.746 (6.085-9.618)	0.452	0.057
<i>Faecalibacterium</i>	7.408 (5.619-9.985)	8.169 (5.163-9.755)	0.756	0.079
<i>Ruminococcus</i>	4.624 (3.661-5.860)	4.516 (3.085-5.964)	0.438	0.050
<i>Clostridium</i>	4.114 (3.294-5.341)	3.974 (2.686-5.685)	0.274	0.036
<i>Alkaliphilus</i> [#]				
Men	1.901 (1.178-3.882)	2.070 (1.060-3.668)	0.953	0.094
Women	0.885 (1.950-3.430)	1.372 (0.738-2.474)	0.123	0.017
<i>Roseburia</i> [#]				
Men	2.027 (1.194-3.103)	2.005 (0.573-3.588)	0.782	0.081
Women	1.575 (0.860-2.957)	1.878 (0.714-2.861)	0.921	0.092
<i>Lachnospira</i>	1.877 (0.944-2.861)	1.820 (0.966-3.210)	0.709	0.081
<i>Bifidobacterium</i>	1.442 (0.509-3.488)	1.876 (0.887-4.506)	0.0	0.009
<i>Coproccoccus</i>	1.892 (1.234-2.935)	1.623 (0.978-2.682)	0.191	0.031
<i>Flavobacterium</i> [#]				
Men	1.629 (0.792-2.706)	1.104 (0.527-1.847)	0.031	0.009
Women	2.126 (1.018-3.554)	2.046 (1.226-2.488)	0.375	0.047
<i>Parabacteroides</i>	1.267 (0.725-1.981)	1.141 (0.599-1.813)	0.155	0.027
<i>Collinsella</i>	1.019 (0.581-2.013)	1.068 (0.461-1.918)	0.560	0.062
<i>Slackia</i>	0.749 (0.416-1.381)	0.701 (0.303-1.475)	0.243	0.034
<i>Sutterella</i>	0.601 (0.271-1.188)	0.477 (0.217-0.944)	0.162	0.026
Others (<0.5%)				
<i>Butyricimonas</i>	0.233 (0.118-0.388)	0.142 (0.049-0.265)	<0.001	<0.001

*PFM consumption effect by Mann–Whitney U test. Those variables whose *p* values were lower than their FDR critical value were considered significant. [#]Gender significantly affected the taxa relative abundance.

Table S3. Relative abundance (%; median (IQR)) of the main bacterial families (>0.5%) in PFM groups.

PFM groups				
% Relative abundance	Nonconsumers (175)	Consumers (85)	<i>p</i> value	FDR critical value
<i>Lachnospiraceae</i>	17.47 (14.80-21.61)	17.56 (6.082-17.13)	0.357	0.043
<i>Ruminococcaceae</i>	15.62 (13.41-18.61)	15.86 (12.71-19.40)	0.935	0.093
<i>Bacteroidaceae</i>	12.90 (7.809-19.73)	13.76 (6.947-19.60)	0.799	0.079
<i>Clostridiaceae</i>	9.665 (6.406-12.77)	8.486 (5.610-12.01)	0.100	0.020
<i>Coriobacteriaceae</i>	2.373 (1.548-4.051)	2.647 (1.167-4.101)	0.937	0.094
<i>Veillonellaceae</i>	1.991 (1.067-4.381)	2.057 (1.027-4.453)	0.766	0.076
<i>Flavobacteriaceae</i> [#]				
Men	1.677 (0.915-2.816)	1.307 (0.573 -1.972)	0.044	0.005
Women	2.281 (1.289-3.722)	2.229 (1.436-2.678)	0.472	0.055
<i>Porphyromonadaceae</i>	1.804 (1.191-2.669)	1.508 (0.836-2.496)	0.040	0.012
<i>Bifidobacteriaceae</i>	1.316 (0.487-3.397)	1.923 (0.918-4.529)	0.014	0.007
<i>Erysipelotrichaceae</i>	0.831 (0.442-1.466)	0.775 (0.448-1.643)	0.997	0.100
<i>Alcaligenaceae</i>	0.617 (0.276-1.191)	0.502 (0.243-0.993)	0.253	0.037
<i>Sphingobacteriaceae</i> [#]				
Normal body fat levels	0.719 (0.355-1.366)	0.617 (0.324-1.449)	0.573	0.070
High body fat levels	0.436 (0.250-0.760)	0.353 (0.223-1.637)	0.982	0.982

[#]Gender or BMI–fat groups significantly affected the taxa relative abundance.

Table S4. Relative abundance (%; median (IQR)) of the main bacterial species (>0.5%), and those low-abundance species (below 0.5%) showing significant differences between PFM groups.

% Relative abundance	PFM groups			
	Nonconsumers (175)	Consumers (85)	<i>p</i> value	FDR critical value
<i>Blautia coccooides</i>	1.991 (1.543-2.589)	1.856 (1.347-2.612)	0.315	0.038
<i>Bacteroides vulgatus</i>	1.488 (0.560-3.387)	1.269 (0.355-3.064)	0.305	0.036
<i>Faecalibacterium prausnitzii</i>	1.513 (0.924-2.160)	1.431 (0.611-2.172)	0.287	0.033
<i>Alkaliphilus peptidifermentans</i>	0.653 (0.228-1.309)	0.560 (0.240-1.692)	0.947	0.094
<i>Bacteroides uniformis</i>	0.877 (0.386-1.709)	0.822 (0.165-1.634)	0.302	0.034
<i>Collinsella aerofaciens</i>	0.760 (0.469-1.577)	0.836 (0.364-1.577)	0.624	0.065
<i>Alkaliphilus crotonatoxidans</i>	0.773 (0.301-1.730)	0.576 (0.241-1.079)	0.049	0.009
<i>Lachnospira pectinoschiza</i> [#]				
Normal body fat levels	1.227 (0.818-1.781)	0.939 (0.648-1.408)	0.021	0.012
High body fat levels	0.855 (0.533-1.238)	0.906 (0.432-1.615)	0.476	0.050
<i>Roseburia faecis</i>	0.751 (0.321-1.463)	0.758 (0.254-1.338)	0.624	0.065
<i>Bacteroides rodentium</i>	0.703 (0.343-1.356)	0.753 (0.191-1.325)	0.440	0.047
<i>Ruminococcus bromii</i>	0.657 (0.014-1.440)	0.120 (0.004-1.350)	0.113	0.016
<i>Clostridium alkalicellulosi</i>				
Men	0.724 (0.497-0.949)	0.774 (0.540-1.036)	0.655	0.070
Women	0.620 (0.470-0.970)	0.496 (0.383-0.663)	0.021	0.005
<i>Oscillospira</i>	0.673 (0.396-0.918)	0.602 (0.403-0.818)	0.403	0.044
<i>Bacteroides xylanisolvens</i>	0.601 (0.330-0.983)	0.557 (0.230-0.953)	0.943	0.094
<i>Parabacteroides distasonis</i>	0.527 (0.204-0.955)	0.413 (0.154-0.840)	0.161	0.021
Others (<0.5%)				
<i>Bifidobacterium thermophilum</i>	0.000 (0.000-0.000)	0.000 (0.000-0.004)	<0.001	0.001
<i>Bifidobacterium pseudolongum</i>	0.000 (0.000-0.000)	0.001 (0.000-0.005)	<0.001	0.001
<i>Bifidobacterium merycicum</i>	0.001 (0.000-0.002)	0.003 (0.001-0.024)	<0.001	0.001
<i>Bifidobacterium animalis</i>	0.000 (0.000-0.000)	0.001 (0.000-0.147)	<0.001	<0.001
<i>Bifidobacterium magnum</i> [#]				
Men	0.001 (0.000-0.001)	0.002 (0.001-0.007)	<0.001	0.002
Women	0.001 (0.000-0.002)	0.002 (0.001-0.007)	<0.001	0.001

*PFM consumption effect by Mann–Whitney U test. Those variables whose *p* values were lower than their FDR critical value were considered significant.

Gender or BMI–fat groups significantly affected the taxa relative abundance.