

SUPPLEMENTARY TABLES

Supplementary Table 1. Gender, age and daily intake expressed as energy, macronutrients, and dietary fibre intake.

		Donor 1	Donor 2	Donor 3	Donor 4
Gender		M	F	F	F
Age		63	65	63	65
BMI		26	25.4	19.5	25.7
Energy (kcal)	Daily intake	1742.28	1885.05	2565.10	2256.21
Macronutrients (% from daily energy intake)	Total protein	19.46	14.22	14.85	16.89
	Animal protein	13.40	9.39	6.12	7.60
	Vegetable protein	6.06	4.83	8.72	9.29
	Lipids	45.10	64.14	40.48	42.85
	SFA	14.04	11.80	9.09	10.63
	MUFA	20.24	36.92	21.05	17.02
	PUFA	7.81	11.72	7.67	12.24
	Carbohydrates	35.63	20.78	37.14	39.92
	Sugars	18.12	9.50	12.60	13.74
	Polysaccharides	17.33	10.87	23.30	26.19
g/day	Fibre	24.13	23.58	37.1	33.71

Suppl. Table 2. Microbiota composition (relative abundance) of the main taxa found in faecal samples from 4 elderly donors at phylum and genus level and Shannon index.

						Faecal
		Subject 1	Subject 2	Subject3	Subject 4	Pool
PHYLUM	Bacteroidota	66.74%	52.25%	64.37%	47.92%	47.72%
	Firmicutes	31.49%	44.37%	31.37%	50.27%	48.43%
	Proteobacteria	1.17%	2.74%	2.35%	1.57%	3.02%
	Verrucomicrobiota	0.02%	0.29%	1.66%	0.00%	0.59%
	Desulfobacterota	0.36%	0.16%	0.14%	0.08%	0.14%
	Actinobacteria	0.17%	0.14%	0.06%	0.15%	0.07%
	Others	0.05%	0.05%	0.05%	0.01%	0.04%
GENUS	<i>Bacteroides</i>	46.76%	34.27%	36.16%	36.80%	21.89%
	<i>Alistipes</i>	9.61%	6.99%	16.36%	8.21%	15.32%
	<i>Faecalibacterium</i>	6.72%	9.15%	3.09%	3.30%	4.78%
	<i>Parasutterella</i>	0.51%	0.07%	0.15%	1.41%	2.14%
	<i>Oscillospiraceae</i>					
	<i>UCG-002</i>	2.30%	6.97%	3.85%	0.42%	9.94%
	<i>Parabacteroides</i>	4.85%	3.05%	5.27%	1.11%	1.98%
	<i>Asteroleplasma</i>	0.00%	0.01%	0.00%	20.97%	2.91%
	<i>Oscillospiraceae</i>					
	<i>UCG-003</i>	0.00%	0.78%	0.52%	0.31%	0.76%
	<i>Odoribacter</i>	3.86%	0.94%	0.79%	0.29%	2.99%
	<i>Eubacterium</i>	1.86%	6.99%	2.41%	5.19%	3.82%
	<i>Akkermansia</i>	0.02%	0.23%	1.65%	0.00%	0.47%
	<i>Lachnoclostridium</i>	1.27%	0.35%	1.58%	0.15%	0.62%
	<i>Acidaminococcus</i>	0.03%	0.02%	0.02%	1.07%	0.10%

<i>Escherichia-Shigella</i>	0.04%	0.23%	0.08%	0.03%	0.04%
<i>Roseburia</i>	1.23%	2.12%	0.52%	1.10%	0.57%
Others	22.20%	30.17%	28.16%	20.77%	31.76%
SHANNON INDEX	4.86	5.39	5.30	4.32	5.78

Supplementary Table 3. Changes in bacterial relative abundance at phylum taxonomic level with respect to basal control microbiota composition after colonic fermentation of flours substrates, gel-like and bread-like prototypes.

		Bacteroi- dota	Firmi- cutes	Proteo- bacteria	Verruco- microbiota	Desulfo- bacterota	Actino- bacteria	Others
Flours	Unfermented Lentil Flour (UL-F)	1,13%	-1,63%	-1,35%	0,03%	0,45%	1,36%	0,02%
	Fermented Lentil Flour (FL-F)	1,98%	-3,64%	0,63%	0,19%	0,47%	0,34%	0,02%
	Unfermented Quinoa (UQ-F)	-5,97%	5,75%	-0,49%	0,06%	0,27%	0,34%	0,04%
	Fermented Quinoa Flour (FQ-F)	-11,11%	9,04%	1,52%	-0,30%	0,51%	0,30%	0,04%
Bread prototypes	Unfermented Lentil Bread (UL-B)	0,77%	0,98%	-2,18%	-0,17%	-0,02%	0,61%	0,01%
	Fermented Lentil Bread (FL-B)	0,90%	1,00%	-2,02%	-0,26%	-0,02%	0,37%	0,02%
	Unfermented Quinoa Lentil Bread (UQL-B)	-2,54%	3,75%	-0,98%	-0,64%	0,17%	0,23%	0,01%
	Fermented Quinoa Lentil Bread (FQL-B)	3,26%	-0,08%	-3,38%	-0,27%	-0,02%	0,48%	0,01%
Gel prototypes	Unfermented Quinoa Gel (UQ-G)	3,74%	-1,31%	-2,49%	-0,12%	0,03%	0,07%	0,07%
	Fermented Quinoa Gel (FQ-G)	4,75%	-2,19%	-2,58%	-0,33%	0,27%	0,02%	0,05%
	Unfermented Lentil Gel (UL-G)	0,64%	1,63%	-2,41%	-0,07%	0,08%	0,14%	0,00%

Fermented Lentil Gel (FL-G)	2,25%	-1,44%	-0,64%	-0,35%	0,12%	0,05%	0,01%
Unfermented Quinoa /Lentil Gel (UQL-G)	7,90%	-4,92%	-2,56%	-0,50%	-0,01%	0,08%	0,01%
Fermented Quinoa /Lentil Gel (FQL-G)	3,69%	-1,70%	-1,82%	-0,30%	0,07%	0,05%	0,02%

Unfermented lentil flour (UL-F), Fermented lentil flour (FL-F), Unfermented quinoa flour (UQ-F), Fermented quinoa flour (FQ-F), Unfermented quinoa gel (UQ-G), Fermented quinoa gel (FQ-G), Unfermented lentil gel (UL-G), Fermented lentil gel (FL-G), Unfermented quinoa and lentil (UQL-G), Fermented quinoa and lentil gel (FQL-G), Unfermented lentil bread (UL-B), Fermented lentil bread (FL-B), Unfermented quinoa and lentil bread (UQL-B) Fermented quinoa and lentil bread (FQL-B).