Figure S1: Chemical structures of inulin (A) and lactitol (B) and schematic representation of aloe vera pulp structure (C) [45, 51, 54].
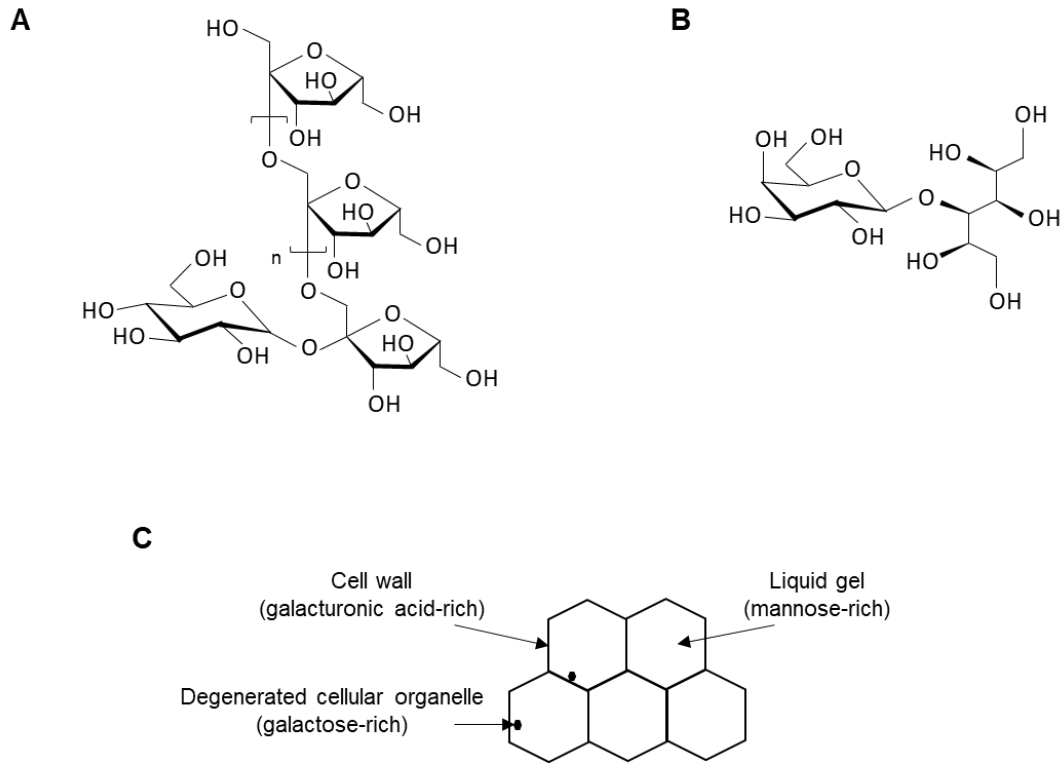
A

B

C

Cell wall (galacturonic acid-rich)	Liquid gel (mannose-rich)
Degenerated cellular organelle (galactose-rich)	

Table S1 - Primer sequences used for real-time quantitative PCR to quantify the relative abundance of bacteria.

Bacteria	Primer sequence (5′→3′)
16S rRNA	Forward: ACTCCTACGGGAGGCAGCAGT
	Reverse: GTATTACCGCGGCTGCTGGCAC
Bifidobacterium longum	Forward: AGAGATACGGCTTCCCTTCG
	Reverse: CGTTGTACCGGCCATTGTAG
Bifidobacterium adolescentis	Forward: CCCCATACACCGGAATAGCT
	Reverse: CAATATTCCCCACTGCTGCC
Bifidobacterium catenulatum	Forward: AGTTCGGATTGGAGTCTGCA
	Reverse: CCCAATCACGAGTCTCACCT
Prevotella ruminicola	Forward: ATAGGATGGGGATGCGTCTG
	Reverse: GTCATCCTGCACGCTACTTG
Propionibacterium acidipropionici	Forward: GATACGGCCCAGACTCCTAC
	Reverse: TCTCCAGGTACCGTCAACAC
Propionibacterium freudenreichii	Forward: AGGGACCCACACCTAGTACC
	Reverse: TGGGGAGCAAACAGGCTTAG
Faecalibacterium prausnitzii	Forward: GGAGGAAGAAGGTCTTCGG
	Reverse: AATTCCGCCTACCTCTGCACT
Clostridium letpum	Forward: GCACAAGCAGTGGAGT
	Reverse: CTTCCTCCGTTTTGTCA
Roseburia hominis	Forward: GGCGGCTTACTGGACGATTA
	Reverse: TAGCACGTGTGTAGCCCAAG
Bifidobacterium lactis	Forward: ATGGACTTTCACACCGGACG
	Reverse: GGCCACATTGGGACTGAGAT
Lactobacillus acidophillus	Forward: CCGAGGGCTTTCACATCAGA
	Reverse: ATACGTAGGTGGCAAGCGTT

Table S2 - Dietary intake of carbohydrates, proteins, fats, and fiber at baseline and 4 weeks of intervention with either placebo or prebiotics.

Nutrients	Placebo (n = 20)	Prebiotics (n = 20)	p-Value[a]
Energy, kcal			
Baseline	1681.33 ± 84.36	1566.08 ± 94.77	0.351
Week 4	1553.34 ± 94.77	1402.91 ± 104.04	0.292
p-Value[b]	0.139	0.106	
Carbohydrates, g			
Baseline	237.19 ± 9.54	218.55 ± 14.94	0.229
Week 4	214.56 ± 14.94	192.98 ± 11.65	0.262
p-Value[b]	0.135	0.031	
Protein, g			
Baseline	65.48 ± 5.35	55.27 ± 3.16	0.130
Week 4	58.44 ± 3.16	49.62 ± 4.17	0.100
p-Value[b]	0.165	0.202	
Fat, g			
Baseline	52.26 ± 4.80	53.02 ± 3.77	0.906
Week 4	51.29 ± 3.77	48.50 ± 5.27	0.670
p-Value[b]	0.809	0.446	
Fiber, g			
Baseline	14.43 ± 1.04	12.53 ± 1.12	0.232
Week 4	13.01 ± 1.12	10.98 ± 0.91	0.168
p-Value[b]	0.356	0.091	

Data are presented as the mean ± SEM. [a], calculated using the Student's t-test (between groups); [b], calculated using paired t-test (within a group).

Table S3 - Maintenance of the effects on the abdominal and fecal symptoms of 40 mildly constipated subjects at 2 weeks from the end of intervention, based on self-reporting.

Symptoms	Placebo (n = 20)	Prebiotics (n = 20)	*p*-Value
Stool frequency, *n* (%)			
Maintain	5 (25)	4 (20)	
No change	7 (35)	9 (45)	0.807 [a]
Disappear	8 (40)	7 (35)	
Stool consistency, *n* (%)			
Maintain	-	2 (10)	
No change	17 (85)	15 (75)	0.346 [a]
Disappear	3 (15)	3 (15)	
Regularity of evacuation, *n* (%)			
Maintain	6 (30)	3 (15)	
No change	9 (45)	7 (35)	0.233 [a]
Disappear	5 (25)	10 (50)	
Time required for evacuation, *n* (%)			
Maintain	3 (15)	-	
No change	15 (75)	20 (100)	0.057 [a]
Disappear	2 (10)	-	
Flatulence, *n* (%)			
Maintain	-	-	
No change	19 (95)	20 (100)	0.311 [a]
Disappear	1 (5)	-	
Time required for symptom change, day	7.00 ± 1.73	6.33 ± 1.89	0.801 [b]

[a], calculated using Chi-square test; [b], calculated using the Student's t-test.

Table S4 - Fecal concentrations of three major short-chain fatty acids at baseline and 4 weeks of treatment with either placebo or prebiotics.

Short chain fatty acids	Placebo (n-=20)	Prebiotics (n-=20)	p-Value[a]
Acetate, ng/mg feces			
Baseline	90.93 ± 13.18	83.71 ± 9.99	0.665
Week 4	90.12 ± 11.53	103.45 ± 11.26	0.413
p-Value[b]	0.943	0.140	
Change of acetate	0.80 ± 11.04	-19.74 ± 12.81	0.232
Propionate, ng/mg feces			
Baseline	54.20 ± 5.33	68.46 ± 7.88	0.142
Week 4	62.33 ± 7.85	74.14 ± 7.60	0.287
p-Value[b]	0.359	0.579	
Change of propionate	-8.13 ± 8.66	-5.67 ± 10.05	0.854
Butyrate, ng/mg feces			
Baseline	75.25 ± 8.32	72.91 ± 8.72	0.847
Week 4	75.62 ± 6.65	75.23 ± 10.79	0.976
p-Value[b]	0.971	0.785	
Change of butyrate	-0.37 ± 10.01	-2.32 ± 8.39	0.882

Data are presented as the mean ± SEM. Changes in the concentration of short-chain fatty acids were calculated by subtracting the values at week 4 from those at baseline. [a], calculated using the Student's t-test (between groups); [b], calculated using paired t-test (within a group).

Table S5 - Gut microbial diversity of responders and non-responders treated with prebiotics, selected by changes in serum CD14 concentration and time required for evacuation.

Diversity index	Responder (n = 6)	Non-responder (n = 6)	p-Value[a]
OTU			
Baseline	550.67 ± 41.25	639.67 ± 94.03	0.406
Week 4	584.17 ± 51.57	663.17 ± 117.75	0.553
p-Value[b]	0.534	0.667	
Chao 1			
Baseline	561.37 ± 38.54	645.08 ± 93.61	0.428
Week 4	594.64 ± 51.58	672.61 ± 116.84	0.555
p-Value[b]	0.538	0.612	
Shannon			
Baseline	3.41 ± 0.22	3.08 ± 0.35	0.445
Week 4	3.18 ± 0.13	3.23 ± 0.35	0.907
p-Value[b]	0.312	0.704	

Data are presented as the mean ± SEM. [a], calculated using the Student's t-test (between groups); [b], calculated using paired t-test (within a group).