

Table 3. Evidence Supporting “PHGG fiber Has a Prebiotic Effect, Stimulating the Growth of Beneficial Bacteria in the Digestive Tract”

Green = positive, supportive results		Yellow = neutral results (no effect shown)		Red = negative results (opposite effect shown)
●● indicates key supportive data.				
Reference	Study Design	Intervention	Population	“PHGG fiber has a prebiotic effect, stimulating the growth of beneficial bacteria in the digestive tract”
All Studies Conducted in Adult Populations				
1. Carlson et al, 2016	<p><b>Design:</b> Clinical laboratory study</p> <p><b>Primary endpoint:</b> Fecal bacterial changes based on 16S rRNA sequencing</p>	<p>Fecal samples were exposed to 0.5 g PHGG</p> <p><b>Study length:</b> 24 hours</p>	<p>Healthy fecal donors qualified from a screening questionnaire and participation in a previous study; n=6</p>	<p><b>Parabacteroides sequence reads, %:</b> Baseline: 3.48% 24 hours: 10.62%, <math>P=0.0181</math></p> <p><b>Bacteroides sequence reads, %:</b> Baseline: 45.89% 24 hours: 50.29%, <math>P=0.0008</math></p> <p>PHGG stimulates growth of <i>Parabacteroides</i> and <i>Bacteroides</i>, which may be correlated with health benefits.</p>
2. Ohashi et al, 2015	<p><b>Design:</b> Single-arm, open-label cohort study</p> <p><b>Primary endpoint:</b> Fecal bacterial changes based on 16S rRNA sequencing</p>	<p>6 g PHGG daily added to diet</p> <p><b>Study length:</b> 6 weeks (2 week washout period, 2 week intake period, 2 week, 2 week no-intake follow-up period)</p>	<p>Healthy female volunteers aged 21-24 years; n=10</p>	<p><b>Concentration of <i>Bifidobacterium</i> species in feces, log<sub>10</sub> copy number of gene per g feces (SD):</b> Before (washout): 11.0 (0.2) Intake period: 11.7 (0.2), <math>P&lt;0.05</math> vs before and after After (no-intake): 11.3 (0.2), <math>P&lt;0.05</math> vs before and intake period</p> <p>PHGG increased fecal concentrations of butyrate-producing bacteria, including <i>Bifidobacterium</i> species.</p>
3. Takahashi et al, 1994	<p>Open-label, single-arm study</p>	<p>PHGG 11 g/day for 3 weeks</p>	<p>Women with constipation (abdominal pain and discomfort and BM frequency typically &lt;3x/week; volunteers were employed or family members of the study sponsor), ages 18-48 years (mean 28.7); n=15</p>	<p>The frequency of <i>Lactobacillus</i> species in feces were significantly (<math>p&lt;0.05</math>) increased from 33% to 67% with intake of PHGG, but dropped back to 36% with the withdrawal of PHGG.</p>
4. Okubo et al, 1994	<p>Open-label, single-arm study</p>	<p>PHGG 21 g/day for 2 weeks (beverage with 7 g PHGG consumed 3x/day)</p>	<p>Healthy males; n=9</p>	<p>PHGG significantly increased (<math>p&lt;0.05</math>) the percentage of <i>Bifidobacterium</i> spp. in total bacterial cells from 14.7% to 31.7%; also significantly (<math>p&lt;0.01</math>) increased the frequency of occurrence of <i>Lactobacillus</i> spp. in the feces from 67% to 94%.</p>