

**Table S1.** Anaphylactic Symptom Scoring

Score	Symptoms
0	No symptoms
1	Scratching nose and mouth
2	Swelling around the eyes and mouth; pillar erection; reduced activity; higher breathing rate
3	Shortness of breath; blue rash around the mouth and tail; higher breaching rate
4	No activity after stimulation, shivering and muscle contractions
5	Death by shock

**Table S2.** Structural characterization of BLG, LG-Glu, LG-CA and LG-CG

Sample	Polyphenes bound (mg/g protein)	Free amino acid (mg/mL)	Tyrosine group (mg/mL)
BLG	-	0.076±0.00 <sup>a</sup>	0.024±0.00 <sup>a</sup>
LG-Glu	-	0.052±0.00 <sup>b</sup>	0.019±0.00 <sup>b</sup>
LG-CA	35.38±0.49 <sup>a</sup>	0.059±0.00 <sup>c</sup>	0.014±0.00 <sup>c</sup>
LG-CG	34.60±1.45 <sup>a</sup>	0.068±0.00 <sup>d</sup>	0.021±0.00 <sup>d</sup>

**Table S3.** Gut flora  $\alpha$ -diversity of BLG, LG-Glu, LG-CA and LG-CG group

Sample	Chao	Sobs	Ace	Coverage
Control	295.47±17.10 <sup>a</sup>	261.33±18.03 <sup>a</sup>	290.57±13.20 <sup>a</sup>	0.9987±0.00 <sup>a</sup>
BLG	296.91±14.40 <sup>a</sup>	268.33±16.01 <sup>a</sup>	288.93±9.87 <sup>a</sup>	0.9983±0.00 <sup>a</sup>
LG-Glu	349.07±30.57 <sup>b</sup>	322.67±17.62 <sup>b</sup>	340.87±14.78 <sup>b</sup>	0.9988±0.00 <sup>a</sup>
LG-CA	338.93±15.59 <sup>b</sup>	308.00±47.00 <sup>ab</sup>	334.06±16.55 <sup>b</sup>	0.9985±0.00 <sup>a</sup>
LG-CG	336.27±12.40 <sup>ab</sup>	311.00±18.36 <sup>b</sup>	330.41±15.47 <sup>b</sup>	0.9985±0.00 <sup>a</sup>