

Supporting information

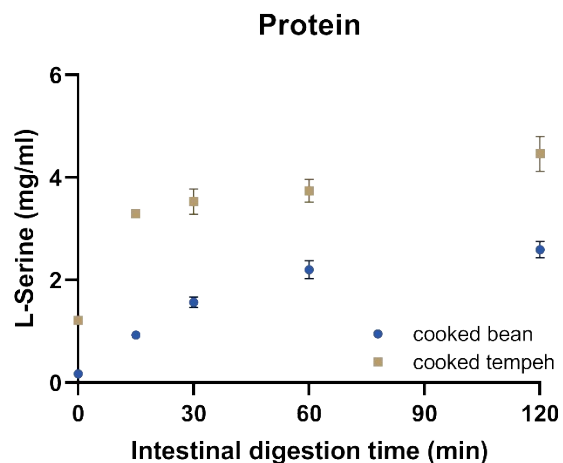


Fig. S1. Concentration of L-serine equivalents (a measure of protein hydrolysis) in the supernatant during in vitro digestion of cooked Jack bean and Jack bean tempeh (N=3, Mean with error bars that indicate standard deviations).

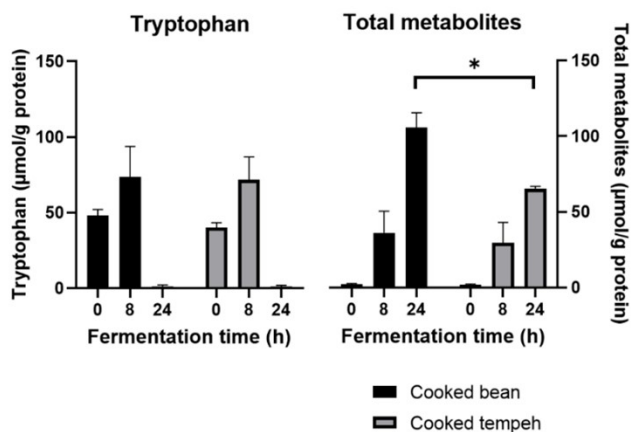


Fig. S2. Tryptophan and total Tryptophan metabolites produced per g protein of cooked bean and cooked tempeh during in vitro colonic fermentation. An asterisk symbol indicates a significant difference ($p < 0.05$). (N=3, Mean with error bars that indicate standard error of the mean)

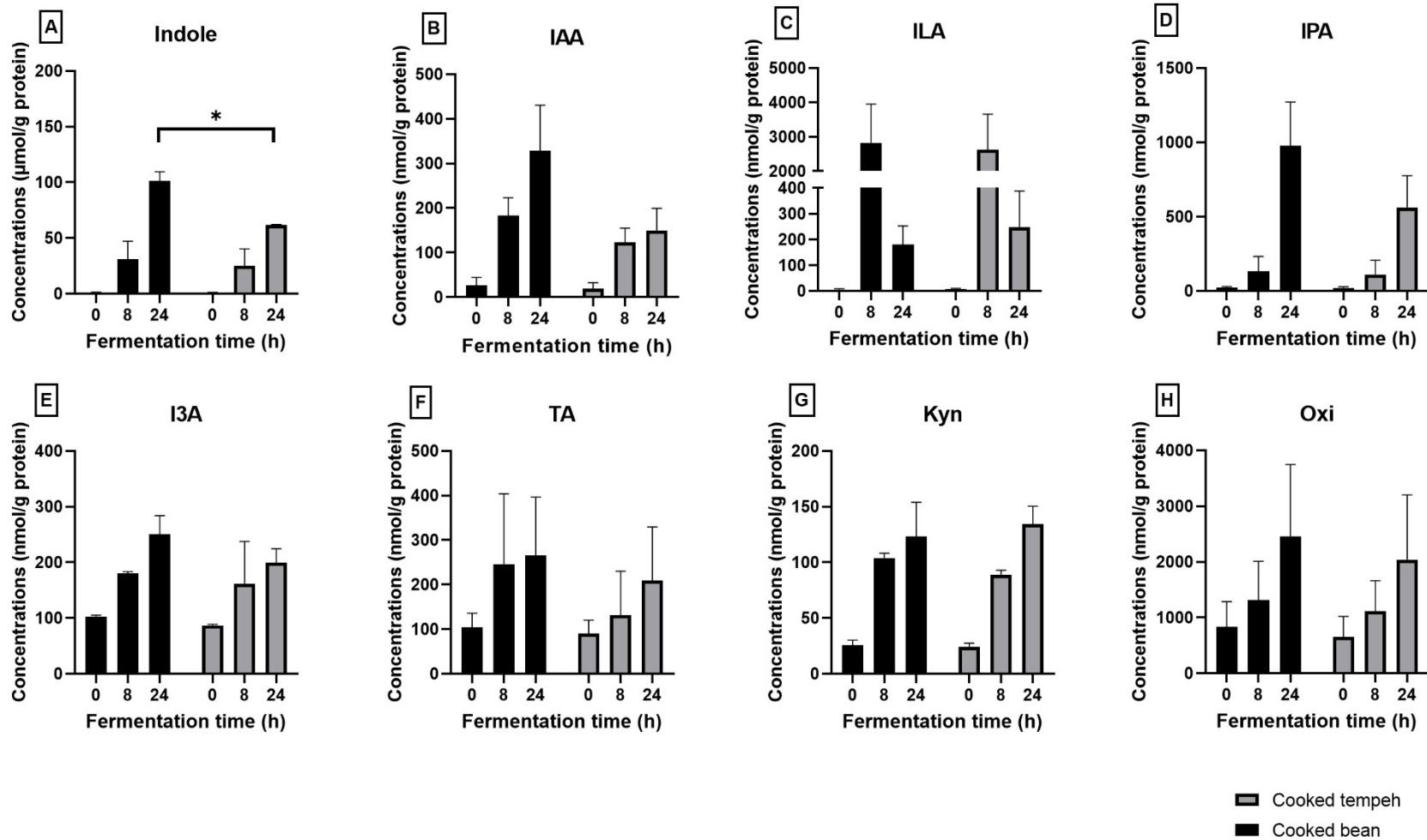


Fig. S3. Tryptophan metabolites produced per g protein of cooked bean and cooked tempeh during in vitro colonic fermentation of cooked jack beans and cooked Jack bean tempeh. An asterisk symbol indicates a significant difference. (N=3, Mean with error bars that indicate standard error of the mean) IAA: Indole-3-acetic acid, ILA: Indole-3-lactic acid, IPA: 3-indolepropionic acid, I3A: Indole-3-aldehyde, TA: tryptamine, Kyn: Kynurenine, Oxi: Oxindole.

Table S1. Starch digestibility of cooked bean and cooked tempeh as expressed as g digested starch/100 g starch (N=3, Mean \pm standard deviations)

Intestinal phase (min)	g digested starch/100 g starch	
	Cooked bean	Cooked tempeh
0	0.0 \pm 0.1	0.9 \pm 0.1*
15	32.2 \pm 1.0	32.7 \pm 2.0
30	35.4 \pm 1.5	33.3 \pm 1.7
60	46.2 \pm 3.0	35.1 \pm 2.0*
120	48.9 \pm 1.7	35.8 \pm 2.0*

Asterisk symbol indicates a significant difference between cooked bean and cooked tempeh.

Table S2. SCFAs produced by cooked bean and cooked tempeh during colonic fermentation after normalization with blank samples (N=3, Mean \pm standard error of the mean)

SCFAs	Time (h)	Cooked bean (mmol/g DM)	Cooked tempeh (mmol/g DM)
Acetate	8	0.328 \pm 0.020	0.347 \pm 0.088
	24	0.490 \pm 0.175	0.463 \pm 0.090
Propionate	8	0.148 \pm 0.028	0.211 \pm 0.023
	24	0.216 \pm 0.037	0.342 \pm 0.052*
Butyrate	8	-0.005 \pm 0.004	-0.013 \pm 0.028
	24	0.041 \pm 0.051	-0.006 \pm 0.039
Valerate	8	-0.019 \pm 0.010	-0.021 \pm 0.020
	24	-0.024 \pm 0.021	-0.046 \pm 0.030
Isobutyrate	8	0.000 \pm 0.000	0.000 \pm 0.001
	24	-0.037 \pm 0.013	-0.039 \pm 0.015
Isovalerate	8	0.000 \pm 0.001	-0.001 \pm 0.003
	24	-0.034 \pm 0.006	-0.039 \pm 0.013
Total SCFAs	8	0.451 \pm 0.049	0.524 \pm 0.119
	24	0.650 \pm 0.251	0.676 \pm 0.153

Asterisk symbol indicates a significant difference between cooked bean and cooked tempeh.

Table S3. Tryptophan, glutamate, and GABA content in dry bean flour (N=3, Mean \pm standard deviations)

Amino acids	Cooked bean (mg/g dry flour)	Cooked tempeh (mg/g dry flour)
Tryptophan	0.02 \pm 0.00	8.12 \pm 0.09
Glutamate	0.92 \pm 0.03	18.56 \pm 0.20
GABA	1.10 \pm 0.06	8.06 \pm 0.02

Table S4. %abundance of Tryptophan metabolites

Trp metabolites	%abundance	
	CB	CT
Indole	95.7	94.6
IAA	0.3	0.2
ILA	0.2	0.4
IPA	0.9	0.9
I3A	0.2	0.3
TA	0.3	0.3
Kyn	0.1	0.2
Oxi	2.3	3.1