

## Supplementary

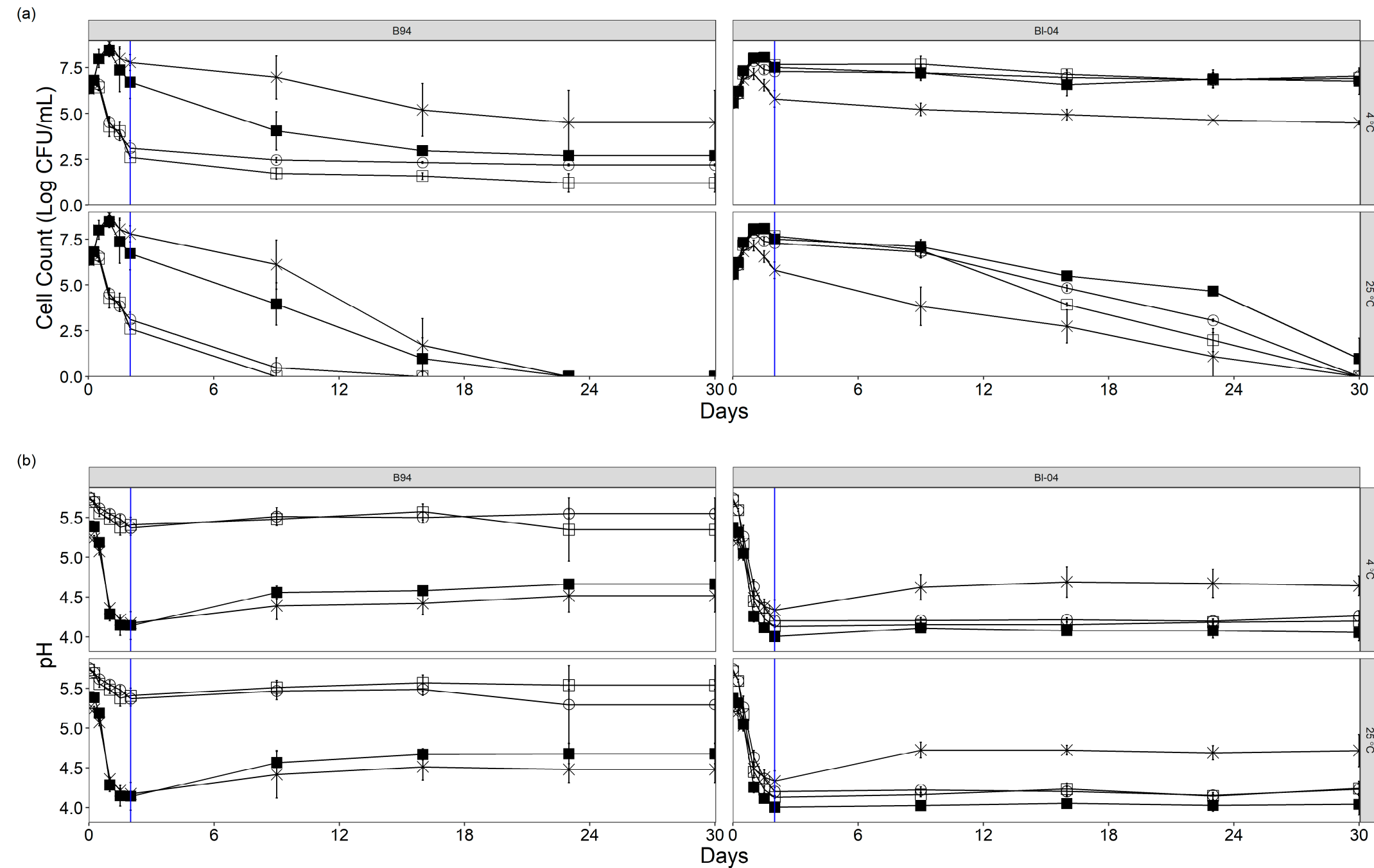
# Growth, Substrate, and Metabolite Changes of Probiotic *Bifidobacterium animalis* subsp. *lactis* in Soy (Tofu) Whey

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**Figure S1.** Changes of (a) cell count, and (b) pH of *B. lactis* BI-04 or B94 fermented soy whey stored for 4 weeks at ambient (25 °C) or chilled (4 °C) temperature. Blue line represents 48-h fermentation at 37 °C. ○ CN = control, □ G = glucose supplemented, × GC = glucose and cysteine supplemented, ■ GCY = glucose, cysteine, and yeast extract supplemented.

**Table S1.** Free amino acids of soy whey before and after *B. lactis* BI-04 or B94 fermentation.

	CN			G			GC			GCY		
	T 0 h <sup>‡</sup>	T 48 h BI-04	T 48 h B94	T 0 h <sup>‡</sup>	T 48 h BI-04	T 48 h B94	T 0 h <sup>‡</sup>	T 48 h BI-04	T 48 h B94	T 0 h <sup>‡</sup>	T 48 h BI-04	T 48 h B94
<b>Amino acids (mg/L)</b>												
Aspartic acid <sup>*</sup>	6.42 ± 0.10b	0.29 ± 0.17c	6.43 ± 0.31b	5.53 ± 0.50b	0.26 ± 0.05c	6.66 ± 0.14b	4.78 ± 0.33b	2.81 ± 0.88bc	0.44 ± 0.02c	28.4 ± 7.25a	27.39 ± 1.52a	25.63 ± 3.42a
Threonine <sup>*</sup>	5.93 ± 0.18def	4.2 ± 0.65ef	6.48 ± 0.06def	5.40 ± 0.53def	3.62 ± 0.61f	6.13 ± 0.09def	4.11 ± 0.68f	8.27 ± 0.76d	7.27 ± 1.69de	29.18 ± 1.76c	38.39 ± 1.70a	34.55 ± 2.86b
Serine <sup>*</sup>	5.62 ± 0.80c	0.58 ± 0.16d	6.15 ± 0.25c	5.22 ± 0.56c	0.60 ± 0.25d	5.88 ± 0.26c	4.73 ± 0.47c	5.61 ± 0.36c	6.09 ± 1.22c	35.18 ± 2.42b	35.11 ± 3.69b	41.4 ± 3.28a
Asparagine + glutamic acid <sup>‡*®</sup>	22.08 ± 0.48b	4.26 ± 0.19d	20.43 ± 0.85b	20.86 ± 2.33b	3.54 ± 0.46d	20.67 ± 0.33b	18.5 ± 0.73bc	16.56 ± 1.7bc	10.06 ± 0.80cd	101.34 ± 4.38a	97.84 ± 6.49a	91.94 ± 11.09a
Glycine <sup>‡*</sup>	5.93 ± 0.22d	2.65 ± 0.07e	6.75 ± 0.19d	5.68 ± 0.76d	2.37 ± 0.29e	6.36 ± 0.25d	5.37 ± 0.35d	7.46 ± 0.28d	6.73 ± 0.50d	24.31 ± 2.34c	31.69 ± 1.20a	29.05 ± 1.83b
Alanine <sup>*</sup>	24.00 ± 1.37d	4.10 ± 1.16f	24.97 ± 0.97d	22.16 ± 2.81d	2.43 ± 0.25f	23.21 ± 0.84d	21.49 ± 1.66d	12.67 ± 2.25e	11.54 ± 0.85e	85.47 ± 2.44a	65.62 ± 4.79c	79.16 ± 5.19b
Valine <sup>‡*®</sup>	26.33 ± 1.04c	10.21 ± 0.28d	24.13 ± 0.52c	24.39 ± 2.38c	7.13 ± 0.84d	23.4 ± 0.58c	24.88 ± 1.63c	21.67 ± 1.11c	22.63 ± 1.64c	60.78 ± 5.37b	59.67 ± 1.93b	70.19 ± 4.45a
Cysteine <sup>‡*®</sup>	1.38 ± 0.14e	1.30 ± 0.09e	1.32 ± 0.07e	1.04 ± 0.19e	1.03 ± 0.17e	1.19 ± 0.08e	116.04 ± 17.31ab	95.11 ± 2.55cd	87.11 ± 5.72d	124.83 ± 10.91a	98.56 ± 6.56cd	107.87 ± 1.41bc
Cystathionine <sup>‡*®</sup>	0.90 ± 0.20fg	1.47 ± 0.17ef	0.34 ± 0.06g	0.80 ± 0.17g	1.61 ± 0.20e	0.42 ± 0.07g	1.67 ± 0.27de	2.31 ± 0.38bcd	3.13 ± 0.16a	2.76 ± 0.46ab	2.10 ± 0.44cde	2.75 ± 0.28abc
Methionine <sup>*®</sup>	4.40 ± 0.25cd	1.04 ± 0.08fg	4.31 ± 0.09cd	4.16 ± 0.34cd	1.00 ± 0.21g	4.20 ± 0.08cd	5.06 ± 0.15c	3.42 ± 0.47de	2.57 ± 0.19ef	16.57 ± 1.34a	14.78 ± 0.56b	14.75 ± 1.46b
Isoleucine <sup>*®</sup>	5.18 ± 0.18cd	0.48 ± 0.06f	4.99 ± 0.05cde	4.80 ± 0.40cde	0.20 ± 0.07f	4.88 ± 0.13cde	6.78 ± 0.46c	1.69 ± 0.45ef	2.23 ± 0.1def	36.09 ± 2.35b	35.26 ± 1.54b	43.75 ± 3.77a
Leucine <sup>‡*®</sup>	7.44 ± 0.22c	1.5 ± 0.05de	8.27 ± 0.1c	6.89 ± 0.55cd	0.80 ± 0.11e	7.98 ± 0.11c	8.35 ± 0.21c	4.28 ± 0.66cde	4.09 ± 0.81cde	63.37 ± 3.84a	55.73 ± 2.11b	64.12 ± 6.53a
Tyrosine <sup>‡*®</sup>	17.05 ± 1.78c	3.74 ± 0.12de	16.27 ± 0.28c	15.02 ± 1.02c	2.24 ± 0.57e	15.69 ± 0.26c	16.57 ± 0.95c	8.45 ± 1.86d	5.67 ± 1.27de	56.19 ± 3.36a	48.72 ± 2.13b	52.19 ± 4.88ab
Phenylalanine <sup>+</sup>	1.28 ± 0.20a	1.84 ± 2.50a	1.12 ± 0.03a	1.07 ± 0.16a	0.66 ± 0.24a	1.09 ± 0.08a	1.64 ± 0.21a	1.45 ± 0.36a	1.52 ± 0.35a	1.02 ± 0.11a	1.03 ± 0.13a	1.43 ± 0.17a
Homocysteine <sup>‡*®</sup>	182.16 ± 2.40c	108.29 ± 1.72d	194.1 ± 7.3c	175.59 ± 15.48c	91.04 ± 9.69d	196.16 ± 6.25c	187.46 ± 7.97c	198.36 ± 8.71c	187.96 ± 20.81c	309.17 ± 11.36a	270.94 ± 8.1b	269 ± 11.76b
Histidine <sup>‡*®</sup>	5.81 ± 0.11c	2.87 ± 0.84d	6.88 ± 0.18c	5.83 ± 0.53c	2.55 ± 0.40d	6.75 ± 0.15c	6.81 ± 0.26c	6.21 ± 0.32c	5.68 ± 0.57c	15.91 ± 0.7b	17.87 ± 0.58a	18.79 ± 1.23a
Lysine <sup>*</sup>	12.10 ± 0.35c	7.18 ± 0.14de	15.39 ± 0.19c	11.21 ± 1.01cd	6.09 ± 0.73e	14.64 ± 0.22c	12.69 ± 0.73c	15.25 ± 0.04c	14.72 ± 0.98c	41.39 ± 4.13b	53.08 ± 2.07a	57.01 ± 3.19a
Ammonium <sup>‡*®</sup>	4.22 ± 0.52d	3.67 ± 0.96d	3.65 ± 0.51d	4.39 ± 1.31d	2.84 ± 0.48d	3.51 ± 0.41d	6.93 ± 1.13c	13.3 ± 0.91b	11.92 ± 1.03b	7.22 ± 0.57c	15.68 ± 1.78a	11.77 ± 0.53b
Arginine <sup>‡*</sup>	73.14 ± 1.91b	0.76 ± 0.07d	74.53 ± 0.79b	67.88 ± 5.13bc	0.62 ± 0.13d	71.97 ± 0.27b	66.84 ± 3.42bc	63.66 ± 0.66c	63.59 ± 4.65c	93.11 ± 5.44a	7.06 ± 2.01d	99.64 ± 4.70a
Proline <sup>*</sup>	9.46 ± 0.42d	7.24 ± 0.77d	13.9 ± 0.37cd	9.41 ± 2.13d	6.56 ± 0.71d	13.00 ± 0.25cd	11.02 ± 0.64cd	19.83 ± 0.79c	14.33 ± 1.11cd	61.73 ± 11.65b	86.49 ± 3.50a	61.59 ± 3.8b
<b>Total amino acids<sup>*®</sup></b>	502.24 ± 10.98de	210.61 ± 8.46f	521.73 ± 9.17de	476.09 ± 38.16e	175.27 ± 19.45f	516.65 ± 6.37de	613.23 ± 39.23c	582.62 ± 4.88cd	544.56 ± 45.02cde	1323.08 ± 66.85a	1218.39 ± 28.23b	1305.21 ± 73.36ab
GABA (mg/L) <sup>‡*®</sup>	45.74 ± 2.02b	20.34 ± 2.26c	41.47 ± 0.93b	44.63 ± 2.79b	18.79 ± 3.17c	43.87 ± 1.59b	42.49 ± 2.14b	40.95 ± 1.78b	42.69 ± 2.72b	54.3 ± 2.42a	53.94 ± 2.12a	54.86 ± 4.47a

a-g Statistical analysis using ANOVA at 95% confidence interval with Tukey’s post hoc test across 8 treatments if interaction effect is significant.

<sup>\*</sup>Depicts a significant (*P*<0.05) bifidobacterial effect.

<sup>\*</sup>Depicts a significant (*P*<0.05) supplementation effect.

<sup>®</sup>Depicts a significant (*P*<0.05) interaction effect.

<sup>‡</sup>T 0 h, data taken from Tindjau et al. (2023) [19], as they were part of the same experiment.

CN = unsupplemented control, G = glucose supplementation, GC = Glucose and cysteine supplementation, GCY = Glucose, cysteine and yeast extract supplementation.

**Table S2.** Two-way ANOVA on soy whey free minerals before and after *B. lactis* BI-04 or B94 fermentation.

	CN			G			GC			GCY		
	T 0 h <sup>†</sup>	T 48 h BI-04	T 48 h B94	T 0 h <sup>†</sup>	T 48 h BI-04	T 48 h B94	T 0 h <sup>†</sup>	T 48 h BI-04	T 48 h B94	T 0 h <sup>†</sup>	T 48 h BI-04	T 48 h B94
Minerals (mg/L)												
Potassium <sup>++@</sup>	66.98 ± 0.1bc	67.88 ± 0.15b	66.1 ± 0.50bc	60.5 ± 0.15ef	59.03 ± 0.23f	62.4 ± 0.32de	61.83 ± 0.15def	64.08 ± 0.3cd	61.48 ± 4.10def	67.38 ± 0.23bc	71.2 ± 0.64a	68.65 ± 1.97ab
Sodium <sup>*</sup>	5.02 ± 0.05b	5.51 ± 0.06b	5.17 ± 1.39b	4.66 ± 0.04b	4.71 ± 0.05b	4.89 ± 1.30b	4.83 ± 0.05b	4.81 ± 0.05b	4.64 ± 1.16b	12.88 ± 0.05a	13.83 ± 1.16a	13.13 ± 1.13a
Magnesium <sup>++@</sup>	92.63 ± 0.75a	94.08 ± 0.70a	90.50 ± 0.49ab	83.78 ± 0.34cd	82.10 ± 0.53d	85.50 ± 0.56cd	84.98 ± 0.58cd	87.58 ± 0.72bc	84.30 ± 4.69cd	83.7 ± 0.34cd	87.4 ± 1.21bc	84.13 ± 2.21cd
Iron <sup>++@</sup>	0.37 ± 0.02def	0.40 ± 0.01cd	0.25 ± 0.03h	0.35 ± 0.01f	0.36 ± 0.01ef	0.24 ± 0.02h	0.30 ± 0.01g	0.40 ± 0.01c	0.39 ± 0.03cde	0.36 ± 0.01def	0.48 ± 0.01a	0.45 ± 0.02b
Phosphorous <sup>++@</sup>	139.5 ± 0.58d	117 ± 0.82gh	131.25 ± 0.50e	128 ± 0.00ef	112.5 ± 0.58h	128.5 ± 0.58ef	129.25 ± 0.50ef	122.5 ± 1.00fg	112.25 ± 6.24h	183.00 ± 0.00a	163.00 ± 6.33b	154.00 ± 4.77c
Zinc <sup>++@</sup>	0.13 ± 0.00cd	0.13 ± 0.01c	0.13 ± 0.01de	0.12 ± 0.01e	0.12 ± 0.01e	0.12 ± 0.01de	0.13 ± 0.01cde	0.13 ± 0.01cde	0.12 ± 0.01de	0.29 ± 0.01ab	0.29 ± 0.01a	0.29 ± 0.01b
Copper <sup>++@</sup>	0.51 ± 0.01a	0.43 ± 0.01abc	0.49 ± 0.05ab	0.47 ± 0.01abc	0.37 ± 0.01c	0.48 ± 0.05abc	0.39 ± 0.01bc	0.13 ± 0.01e	0.19 ± 0.05de	0.40 ± 0.01bc	0.23 ± 0.09de	0.27 ± 0.09d
Cobalt <sup>++@</sup>	0.04 ± 0.01a	0.04 ± 0.01b	0.04 ± 0.01ef	0.04 ± 0.01bc	0.03 ± 0.01f	0.03 ± 0.01f	0.04 ± 0.01cde	0.04 ± 0.01def	0.03 ± 0.01g	0.04 ± 0.01a	0.04 ± 0.01b	0.04 ± 0.01bcd
Selenium <sup>++@</sup>	1.47 ± 0.01cde	1.40 ± 0.00ef	1.38 ± 0.01f	1.59 ± 0.01a	1.45 ± 0.01de	1.56 ± 0.04ab	1.58 ± 0.04a	1.53 ± 0.05abc	1.5 ± 0.06bcd	1.56 ± 0.01ab	1.51 ± 0.01bcd	1.48 ± 0.04cd

a-f, Statistical analysis using ANOVA at 95% confidence interval with Tukey’s post hoc test across 8 treatments if interaction effect is significant.

<sup>†</sup>Depicts a significant (*P*<0.05) bifidobacterial effect.

<sup>\*</sup>Depicts a significant (*P*<0.05) supplementation effect.

<sup>@</sup>Depicts a significant (*P*<0.05) interaction effect.

<sup>†</sup>T 0 h, data taken from Tindjau et al. (2023) [19], as they were part of the same experiment.

CN = unsupplemented control, G = glucose supplementation, GC = Glucose and cysteine supplementation, GCY = Glucose, cysteine and yeast extract supplementation.

**Table S3.** Two-way ANOVA on soy whey volatiles before and after *B. lactis* BI-04 or B94 fermentation.

	LRI	CN			G			GC			GCY		
		T 0 h†	T 48 h BI-04	T 48 h B94	T 0 h†	T 48 h BI-04	T 48 h B94	T 0 h†	T 48 h BI-04	T 48 h B94	T 0 h†	T 48 h BI-04	T 48 h B94
		Peak Area x 10 <sup>6</sup>	Peak Area x 10 <sup>6</sup>	Peak Area x 10 <sup>6</sup>	Peak Area x 10 <sup>6</sup>	Peak Area x 10 <sup>6</sup>	Peak Area x 10 <sup>6</sup>	Peak Area x 10 <sup>6</sup>	Peak Area x 10 <sup>6</sup>	Peak Area x 10 <sup>6</sup>	Peak Area x 10 <sup>6</sup>	Peak Area x 10 <sup>6</sup>	Peak Area x 10 <sup>6</sup>
<i>Acids</i>													
Acetic acid <sup>*®</sup>	1446	11.47 ± 1b	88.02 ± 20.67a	14.66 ± 5.16b	10.04 ± 3.25b	111.11 ± 24.52a	28.45 ± 3.29b	15.39 ± 3.83b	96.9 ± 11.05a	110.29 ± 25.9a	11.88 ± 3.94b	111.6 ± 2.69a	129.14 ± 38.27a
Butanoic acid <sup>*®</sup>	1624	0.00 ± 0.00d	1.68 ± 0.50c	0.00 ± 0.00d	0.00 ± 0.00d	1.22 ± 0.22c	0.00 ± 0.00d	0.00 ± 0.00d	0.95 ± 0.27cd	1.25 ± 0.14c	0.00 ± 0.00d	5.22 ± 1.19b	6.21 ± 0.31a
Isovaleric acid <sup>*®</sup>	1667	0.00 ± 0.00b	2.44 ± 0.65a	0.00 ± 0.00b	0.00 ± 0.00b	2.54 ± 0.32a	0.00 ± 0.00b	0.00 ± 0.00b	1.75 ± 0.7a	1.74 ± 0.51a	0.00 ± 0.00b	2.16 ± 0.84a	2.74 ± 0.16a
Pentanoic acid	1720	0.93 ± 0.17ab	0.93 ± 0.07ab	0.92 ± 0.06ab	1.03 ± 0.23a	0.92 ± 0.09ab	0.99 ± 0.12ab	0.85 ± 0.06ab	0.96 ± 0.18ab	0.66 ± 0.15b	0.97 ± 0.2ab	0.92 ± 0.16ab	1.00 ± 0.17ab
Hexanoic acid <sup>*</sup>	1843	39.75 ± 3.68abc	42.75 ± 6.21abc	43.43 ± 2.3abc	42.18 ± 7.05abc	47.4 ± 4.09a	48.34 ± 3.42a	32.66 ± 1.33c	45.8 ± 3.84ab	40.58 ± 5.11abc	34.65 ± 8.35bc	45.44 ± 2.18ab	42.94 ± 1.15abc
Heptanoic acid	1951	2.46 ± 0.14a	1.83 ± 0.36b	2.06 ± 0.17ab	1.98 ± 0.18ab	1.98 ± 0.13ab	2.13 ± 0.12ab	1.99 ± 0.28ab	2.1 ± 0.17ab	1.91 ± 0.18ab	1.91 ± 0.6ab	1.98 ± 0.08ab	1.99 ± 0.13ab
Octanoic acid <sup>*</sup>	2058	4.87 ± 0.28abc	4.21 ± 1.31bc	4.28 ± 0.66bc	3.79 ± 0.64c	4.86 ± 0.65abc	5.14 ± 0.53abc	5.47 ± 1.36abc	6.08 ± 0.75abc	6.27 ± 0.84ab	5.07 ± 1.98abc	6.47 ± 1.01ab	6.70 ± 0.43a
Nonanoic acid	2159	7.22 ± 1.53a	5.38 ± 0.89a	5.04 ± 0.94a	5.68 ± 1.33a	5.54 ± 0.22a	6.21 ± 1.12a	5.81 ± 1.46a	5.28 ± 1.13a	5.48 ± 1.31a	5.11 ± 1.85a	5.51 ± 0.82a	5.34 ± 0.92a
n-Decanoic acid <sup>*®</sup>	2274	0.74 ± 0.13bc	1.92 ± 0.56a	0.23 ± 0.07c	0.51 ± 0.22bc	1.93 ± 0.61a	0.31 ± 0.14bc	0.49 ± 0.15bc	0.8 ± 0.18bc	0.61 ± 0.12bc	2.15 ± 1.09a	1.18 ± 0.17abc	1.38 ± 0.51ab
Benzoic acid <sup>*®</sup>	2425	2.54 ± 0.3a	2.13 ± 0.62ab	2.05 ± 0.54ab	1.25 ± 0.42bc	2.71 ± 0.43a	2.24 ± 0.68ab	2.16 ± 0.8ab	2.41 ± 0.57ab	2.03 ± 0.32ab	0.6 ± 0.3c	2.24 ± 0.15ab	2.45 ± 0.73ab
<i>Alcohols</i>													
1-Penten-3-ol	1158	2.00 ± 0.59a	1.91 ± 0.76a	3.01 ± 0.73a	2.42 ± 0.69a	2.00 ± 0.17a	2.14 ± 0.36a	2.88 ± 0.75a	2.51 ± 0.61a	2.42 ± 0.45a	3.10 ± 1.30a	1.97 ± 0.26a	1.94 ± 0.49a
1-Pentanol	1247	7.06 ± 2.17a	7.3 ± 2.24a	9.18 ± 2.14a	8.26 ± 2.68a	6.61 ± 1.43a	7.60 ± 1.24a	9.16 ± 1.89a	7.98 ± 1.14a	7.82 ± 1.22a	9.20 ± 2.02a	6.54 ± 1.40a	6.59 ± 1.26a
1-Hexanol <sup>+</sup>	1351	41.12 ± 10.21cd	85.40 ± 22.57a	69.89 ± 11.66abc	51.94 ± 13.01bcd	80.33 ± 17.23ab	57.18 ± 9.1abcd	57.82 ± 8.25abcd	71.64 ± 12.26abc	66.84 ± 9.86abcd	38.42 ± 4.84d	79.42 ± 13.84ab	61.46 ± 6.29abcd
1-Octen-3-ol <sup>*®</sup>	1444	26.01 ± 3.27d	67.18 ± 7.99abc	50.28 ± 9.1bcd	23.93 ± 3.27d	75.49 ± 15.42ab	36.30 ± 3.08cd	20.55 ± 6.62d	38.64 ± 6.95cd	52.43 ± 11.53bcd	23.07 ± 4.03d	93.85 ± 13.93a	75.42 ± 36.47ab
1-Octanol <sup>*®</sup>	1561	1.81 ± 0.96b	13.31 ± 2.09a	11.82 ± 2.31a	4.41 ± 5.25b	10.38 ± 1.42a	2.33 ± 1.02b	1.35 ± 0.45b	5.25 ± 0.62b	0.79 ± 0.25b	3.09 ± 2.08b	4.95 ± 0.72b	2.26 ± 0.67b
<i>Aldehydes</i>													
Hexanal <sup>*®</sup>	1082	28.49 ± 6.01bc	2.34 ± 0.68de	47.4 ± 11.44a	43.67 ± 8.74ab	2.14 ± 0.10e	57.98 ± 12.04a	14.38 ± 3.44cde	13.08 ± 1.98de	16.88 ± 3.42cde	17.59 ± 5.14cd	6.74 ± 0.38de	14.46 ± 4.49cde
2-Hexenal, (E)- <sup>*®</sup>	1232	1.44 ± 0.32ab	1.27 ± 0.32abcd	1.41 ± 0.18abc	0.96 ± 0.24cde	1.30 ± 0.13abcd	1.52 ± 0.11a	0.63 ± 0.15e	1.16 ± 0.12abcd	0.85 ± 0.21de	0.98 ± 0.19bcde	0.91 ± 0.15de	1.15 ± 0.08abcd
2-Heptenal <sup>*®</sup>	1331	1.42 ± 0.2bcd	0.40 ± 0.09d	2.21 ± 0.18b	1.46 ± 0.23bcd	0.35 ± 0.03d	1.66 ± 0.06bc	3.46 ± 0.93a	0.40 ± 0.03d	0.38 ± 0.03d	2.39 ± 1.32ab	0.49 ± 0.20cd	0.42 ± 0.05d
2-Octenal, (E)- <sup>*®</sup>	1430	0.79 ± 0.03b	0.33 ± 0.08c	0.81 ± 0.14ab	0.40 ± 0.16c	0.18 ± 0.06c	1.05 ± 0.13a	0.27 ± 0.10c	0.33 ± 0.09c	0.36 ± 0.08c	0.32 ± 0.06c	0.29 ± 0.12c	0.33 ± 0.09c
Benzaldehyde <sup>*®</sup>	1519	11.65 ± 2.95def	16.36 ± 3.42bcde	22.71 ± 2.94ab	9.5 ± 2.97f	19.92 ± 0.68abc	23.09 ± 3.69a	11.44 ± 2def	16.40 ± 1.07bcde	17.04 ± 1.33abcd	9.82 ± 4.79ef	13.88 ± 0.74cdef	15.56 ± 2.03cdef
<i>Ketones</i>													
2,3-Butanedione <sup>*®</sup>	978	0.00 ± 0.00c	17.02 ± 4.15a	0.00 ± 0.00c	0.00 ± 0.00c	11.25 ± 1.27b	0.00 ± 0.00c	0.00 ± 0.00c	9.8 ± 2.35b	9.44 ± 1.26b	0.00 ± 0.00c	8.38 ± 1.35b	8.58 ± 1.45b
2-Heptanone <sup>+</sup>	1182	4.98 ± 1.01abc	6.75 ± 1.52ab	6.85 ± 1.26a	3.95 ± 0.54c	6.77 ± 0.84ab	7.00 ± 0.57a	5.22 ± 0.17abc	6.95 ± 0.5a	6.97 ± 0.91a	4.47 ± 1.48bc	6.83 ± 1.05ab	6.80 ± 0.67ab
Damascenone <sup>*®</sup>	1821	34.04 ± 3.21a	24.04 ± 3.07b	26.3 ± 3.96ab	26.59 ± 4.81ab	23.61 ± 2.41b	29.11 ± 3.67ab	11.8 ± 4.03c	6.21 ± 0.6c	6.07 ± 1.61c	12.07 ± 4.5c	7.16 ± 0.59c	8.37 ± 1.17c
<i>Sulfur compounds</i>													
Hydrogen sulfide <sup>*®</sup>	745	0.00 ± 0.00c	0.00 ± 0.00c	0 ± 0c	0.00 ± 0.00c	0.00 ± 0.00c	0 ± 0c	0.00 ± 0.00c	1.51 ± 0.18b	1.85 ± 0.42ab	0.00 ± 0.00c	2.15 ± 0.39a	2.11 ± 0.48a
Thiophene-3-methyl <sup>*®</sup>	1090	0.00 ± 0.00c	0.00 ± 0.00c	0 ± 0c	0.00 ± 0.00c	0.00 ± 0.00c	0 ± 0c	0.00 ± 0.00c	2.42 ± 0.24a	2.52 ± 0.17a	0.00 ± 0.00c	1.84 ± 0.27b	2.26 ± 0.17a
<i>Furans</i>													
2-Pentyl furan <sup>+</sup>	1216	3.30 ± 0.42a	2.76 ± 0.65a	2.81 ± 0.96a	2.70 ± 0.69a	2.60 ± 0.45a	2.91 ± 0.91a	3.32 ± 0.97a	2.20 ± 0.63a	1.91 ± 0.36a	3.05 ± 0.79a	1.94 ± 0.30a	1.89 ± 0.50a
<i>Total volatiles</i> <sup>*®</sup>		233.97 ± 24.67d	397.56 ± 21.77ab	327.26 ± 22.51c	246.54 ± 18.2d	423.04 ± 29.48a	323.6 ± 17.82c	207.01 ± 12.84d	349.39 ± 28.58bc	365.26 ± 27.15abc	189.82 ± 23.4d	419.94 ± 27.69a	409.37 ± 49.89ab

LRI = Linear retention index

a-f, Statistical analysis using ANOVA at 95% confidence interval with Tukey’s post hoc test across 8 treatments if interaction effect is significant.

<sup>\*</sup>Depicts a significant (*P*<0.05) bifidobacterial effect.

<sup>\*</sup>Depicts a significant (*P*<0.05) supplementation effect.

<sup>®</sup>Depicts a significant (*P*<0.05) interaction effect.

<sup>†</sup>T 0 h, data taken from Tindjau et al. (2023), as they were part of the same experiment.

CN = unsupplemented control, G = glucose supplementation, GC = Glucose and cysteine supplementation, GCY = Glucose, cysteine and yeast extract supplementation.

**Table S4.** Relative peak area of soy whey volatiles before and after *B. lactis* BI-04 or B94 fermentation.

	LRI	CN			G			GC			GCY		
		T 0 h†	T 48 h BI-04	T 48 h B94	T 0 h†	T 48 h BI-04	T 48 h B94	T 0 h†	T 48 h BI-04	T 48 h B94	T 0 h†	T 48 h BI-04	T 48 h B94
		Relative Peak Area	Relative Peak Area	Relative Peak Area	Relative Peak Area	Relative Peak Area	Relative Peak Area	Relative Peak Area	Relative Peak Area	Relative Peak Area	Relative Peak Area	Relative Peak Area	Relative Peak Area
<i>Acids</i>													
Acetic acid	1446	4.90	22.14	4.48	4.07	26.26	8.79	7.43	27.73	30.19	6.25	26.58	31.55
Butanoic acid	1624	0.00	0.42	0.00	0.00	0.29	0.00	0.00	0.27	0.34	0.00	1.24	1.52
Isovaleric acid	1667	0.00	0.61	0.00	0.00	0.60	0.00	0.00	0.50	0.47	0.00	0.51	0.67
Pentanoic acid	1720	0.40	0.23	0.28	0.41	0.22	0.30	0.41	0.27	0.18	0.51	0.22	0.24
Hexanoic acid	1843	16.99	10.75	13.27	17.11	11.20	14.94	15.77	13.11	11.11	18.25	10.82	10.49
Heptanoic acid	1951	1.05	0.46	0.63	0.80	0.47	0.66	0.96	0.60	0.52	1.00	0.47	0.48
Octanoic acid	2058	2.08	1.06	1.31	1.54	1.15	1.59	2.64	1.74	1.72	2.67	1.54	1.64
Nonanoic acid	2159	3.08	1.35	1.54	2.30	1.31	1.92	2.80	1.51	1.50	2.69	1.31	1.30
n-Decanoic acid	2274	0.31	0.48	0.07	0.20	0.46	0.10	0.23	0.23	0.17	1.13	0.28	0.34
Benzoic acid	2425	1.08	0.53	0.62	0.51	0.64	0.69	1.04	0.69	0.55	0.31	0.53	0.60
<i>Alcohols</i>													
1-Penten-3-ol	1158	0.85	0.48	0.92	0.98	0.47	0.66	1.39	0.72	0.66	1.63	0.47	0.47
1-Pentanol	1247	3.02	1.84	2.80	3.35	1.56	2.35	4.42	2.28	2.14	4.84	1.56	1.61
1-Hexanol	1351	17.57	21.48	21.36	21.07	18.99	17.67	27.93	20.50	18.30	20.24	18.91	15.01
1-Octen-3-ol	1444	11.12	16.90	15.36	9.70	17.84	11.22	9.93	11.06	14.35	12.15	22.35	18.42
1-Octanol	1561	0.77	3.35	3.61	1.79	2.45	0.72	0.65	1.50	0.22	1.62	1.18	0.55
<i>Aldehydes</i>													
Hexanal	1082	12.17	0.59	14.48	17.71	0.50	17.91	6.95	3.74	4.62	9.26	1.60	3.53
2-Hexenal, (E)-	1232	0.61	0.32	0.43	0.39	0.31	0.47	0.30	0.33	0.23	0.51	0.22	0.28
2-Heptenal	1331	0.60	0.10	0.67	0.59	0.08	0.51	1.67	0.11	0.10	1.26	0.12	0.10
2-Octenal, (E)-	1430	0.33	0.08	0.25	0.16	0.04	0.32	0.13	0.09	0.10	0.17	0.07	0.08
Benzaldehyde	1519	4.98	4.11	6.94	3.85	4.71	7.13	5.52	4.69	4.66	5.17	3.30	3.80
<i>Ketones</i>													
2,3-Butanedione	978	0.00	4.28	0.00	0.00	2.66	0.00	0.00	2.80	2.58	0.00	1.99	2.10
2-Heptanone	1182	2.13	1.70	2.09	1.60	1.60	2.16	2.52	1.99	1.91	2.35	1.63	1.66
Damascenone	1821	14.55	6.05	8.03	10.78	5.58	8.99	5.70	1.78	1.66	6.36	1.70	2.04
<i>Sulfur compounds</i>													
Hydrogen sulfide	745	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.50	0.00	0.51	0.51
Thiophene-3-methyl	1090	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.69	0.00	0.44	0.55
<i>Furans</i>													
2-Pentyl furan	1216	1.41	0.69	0.86	1.09	0.61	0.90	1.60	0.63	0.52	1.61	0.46	0.46
<i>Total volatiles</i>		100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

LRI = Linear retention index

<sup>‡</sup>T 0 h, data taken from Tindjau et al. (2023) [19], as they were part of the same experiment.

CN = unsupplemented control, G = glucose supplementation, GC = Glucose and cysteine supplementation, GCY = Glucose, cysteine and yeast extract supplementation.