

Table S1 pH, TA and sensory characteristics of the initial kombucha in black tea.

Day	pH	TA	Description of sensory
0	4.3	0.0	Taste like sweet black tea
1	4.2	0.4	Dominate sweet taste, some sour notes
2	4.0	0.4	Slightly acetic taste
3	3.7	0.6	Strongly carbonated, smells like apricot, some bitter notes
4	3.6	0.7	Strongly carbonated, good sweet-sour balance, acetic
5	3.5	1.1	Strongly carbonated, had over-ripened food taste
6	3.4	1.8	Strongly acetic and sour tase
7	3.3	2.7	Strongly carbonated, sour and acetic
8	3.3	2.7	Astringent and very acetic

Table S2 pH, TA and sensory characteristics of the LAB-tailored kombucha in black tea.

Day	pH	TA	Description of sensory
0	4.3	0.0	Taste like sweet black tea
1	4.2	1.1	Dominate sweet taste
2	3.8	1.5	Taste like peach ice tea, sweet
3	3.6	2.0	Taste like peach ice tea, sweet and a bit sour
4	3.5	2.1	Good sweet-sour balance
5	3.4	2.6	Carbonated, good sweet-sour balance
6	3.3	3.0	Carbonated, good sweet-sour balance, no acidic taste occurred
7	3.2	3.4	Dominate sour taste, the odour was characteristic to kombucha
8	3.1	4.2	Dominate strong sour taste

Table S3 The lactic acid bacteria species abundance was measured by qPCR in LAB-tailored kombucha.

Sampling point	Time (months)	<i>Levilactobacillus brevis</i> , cells/mL	<i>Lactiplantibacillus plantarum</i> , cells/mL	<i>Pediococcus pentosaceus</i> , cells/mL
I	1	35000	230000	200000
II	2	2000	650	300
III	2.5	6	1	50
IV	3	70	80	5
V	4	100	10	60

Table S4 pH, TA and sensory characteristics of the orange juice kombucha in the preliminary optimisation study.

Day	pH	TA	Description of sensory
0	4.2	5.0	Taste like orange juice
1	4.2	5.6	Taste like orange juice
2	4.1	6.4	Orange juice, slightly sour and carbonated
3	4.0	7.7	Strongly carbonated, dominative sour taste
4	3.9	9.1	Strongly carbonated, chemical taste, dominative sour taste, astringent

Table S5 Description of sensory characteristics during the orange juice kombucha backslopping (BS). The sensory was conducted by three assessors.

Sample	Description of sensory
BS 0.1	Taste like orange juice
BS 0.2	Orange juice, slightly sour and carbonated
BS 1.1	Taste like orange juice
BS 1.2	Strongly carbonated, dominative sour taste
BS 2.1	Strongly carbonated, good sweet-sour balance
BS 2.2	Strongly carbonated, chemical taste, dominative sour taste
BS 3.1	Strongly carbonated, good sweet-sour balance
BS 3.2	Strongly carbonated, chemical taste, dominative sour taste, astringent
BS 4.1	Strongly carbonated, dominative sour taste
BS 4.2	Strongly carbonated, chemical taste, strong sour, and astringent taste
BS 5.1	Strongly carbonated, dominative sour taste
BS 5.2	Strongly carbonated, chemical taste, strong sour, and astringent taste

Table S6 pH, TA and sensory characteristics of the coffee kombucha in the preliminary optimisation study

Day	pH	TA	Description of sensory
0	-	-	Characteristic taste and odour of coffee
1	4.6	0.9	Characteristic taste and odour of coffee
2	4.5	1.1	Dominative taste of sweet coffee, more sweet than sour taste
3	4.4	1.9	Dominative taste of sweet coffee, balanced sweet and sour taste
4	4.2	2.4	Balanced sweet and sour taste, some notes of acetic acid

5	4.2	3.2	Dominative sour and bitter taste
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Table S7 Description of sensory characteristics during the coffee kombucha backslopping. The sensory was conducted by three assessors.

Sample	Description of sensory
BS 0.1	Characteristic taste and odour of coffee
BS 0.2	Dominative taste of sweet coffee, balanced sweet and sour taste
BS 0.3	Dominative taste of sweet coffee, balanced sweet and sour taste
BS 0.4	Balanced sweet and sour taste, bitterness of coffee was stronger than a day before
BS 1.1	Characteristic taste and odour of coffee
BS 1.2	Dominative taste of sweet coffee, balanced sweet and sour taste
BS 1.3	Balanced sweet and sour taste, some notes of acetic acid
BS 1.4	Dominative sour and bitter taste
BS 2.1	Characteristic taste and odour of coffee
BS 2.2	Dominative taste of sweet coffee, balanced sweet and sour taste, slightly carbonated
BS 2.3	Dominative sour and bitter taste
BS 2.4	Dominative sour and acetic taste
BS 3.1	Characteristic taste and odour of coffee
BS 3.2	Dominative taste of sweet coffee, balanced sweet and sour taste, slightly carbonated
BS 3.3	Dominative taste of sweet coffee, balanced sweet and sour taste, slightly carbonated
BS 3.4	Dominative sour and very bitter taste, carbonated
BS 4.1	Characteristic taste and odour of coffee
BS 4.2	Dominative taste of sweet coffee, balanced sweet and sour taste, slightly carbonated
BS 4.3	Dominative sour taste, carbonated
BS 4.4	Intensively sour and bitter taste, carbonated
BS 5.1	Characteristic taste and odour of coffee
BS 5.2	Dominative taste of sweet coffee, balanced sweet and sour taste, slightly carbonated
BS 5.3	Dominative sour and bitter taste, carbonated
BS 5.4	Intensively sour and bitter taste, carbonated

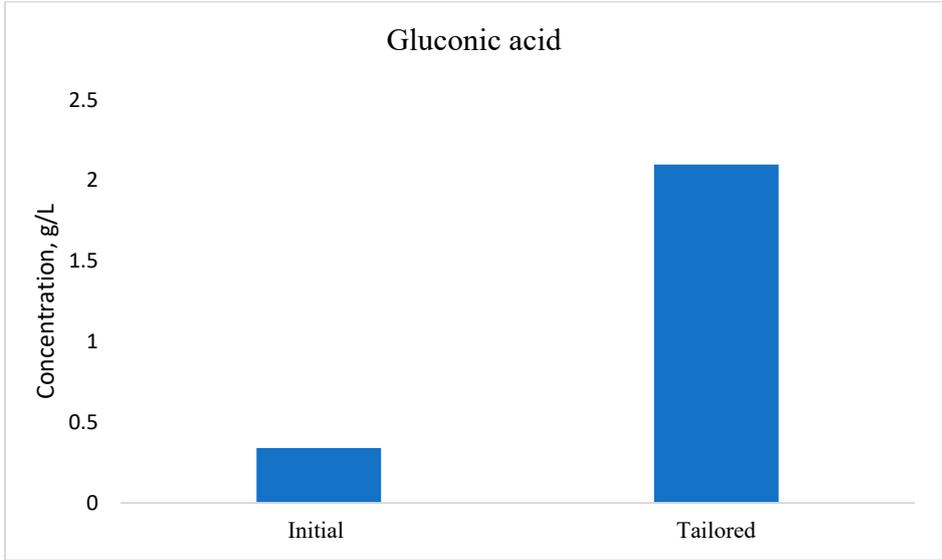


Figure S1 Gluconic acid concentrations in initial and LAB-tailored kombucha.