

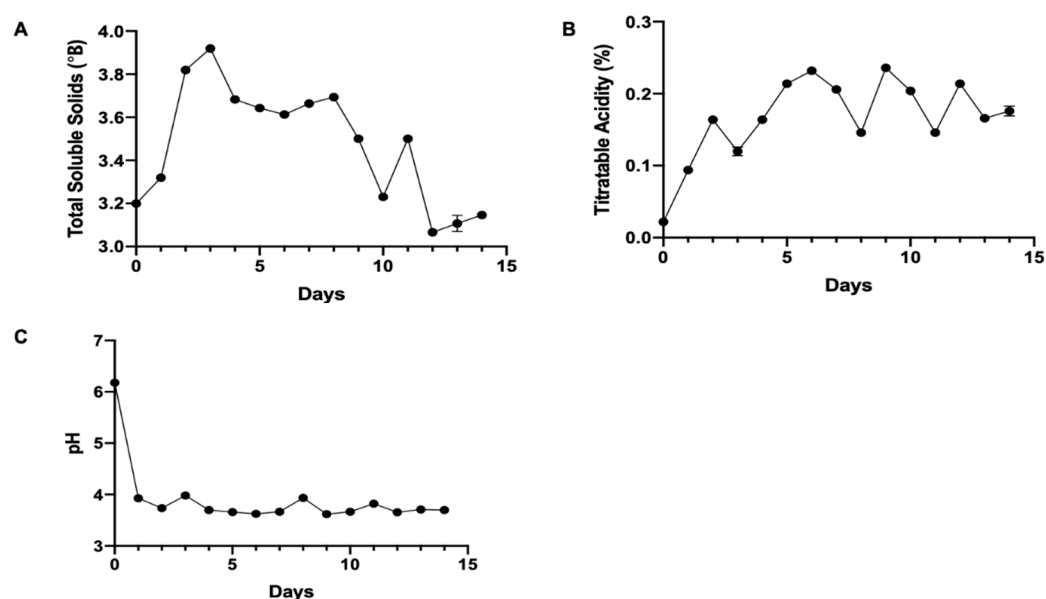


## Article

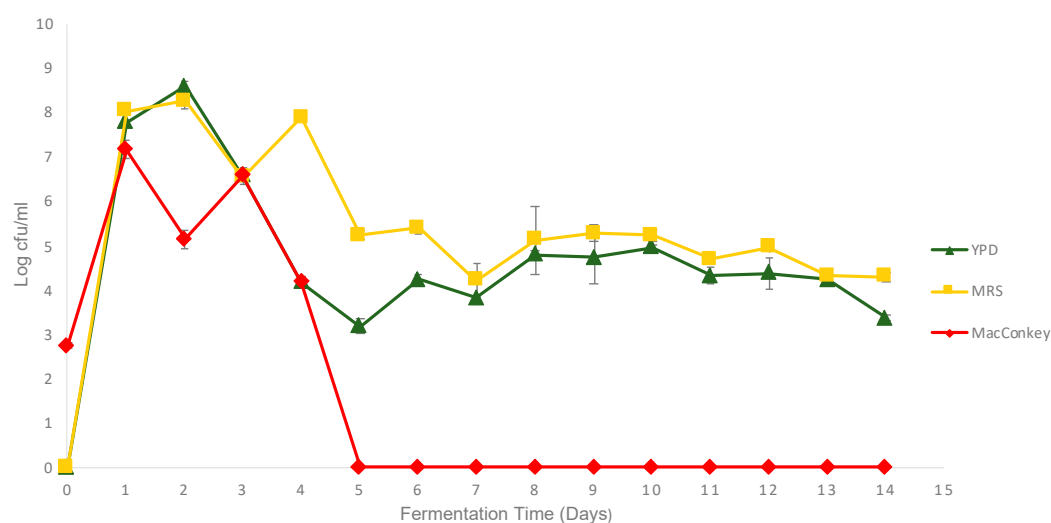
# *In Vitro* Characterisation of Potential Probiotic Bacteria Isolated from a Naturally Fermented Carrot and Ginger Brine

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## Supplementary material



**Figure S1.** Effect of fermentation duration on pH, titratable acidity, and total soluble solids of fermented carrot and ginger brine. (A) Total soluble solids (TSS), (B) Titratable acidity expressed as lactic acid, and (C) pH. The TSS, pH, and titratable acidity of the brine were measured every day of the fermentation process. Error bars represent the standard deviation (n = 3).



**Figure S2.** Microbial community dynamics of spontaneously fermented carrot and ginger brine. Plating was performed on MRS, YPD, and MacConkey agar for the enumeration of LAB, yeast, and coliforms, respectively. Error bars represent the standard deviation (n = 3).

**Table S1.** Morphological and physiological characterisation of isolates from a fermented carrot and ginger brine.

Isolate	Cell Shape	Gram Stain- ing	CO <sub>2</sub> Produc- tion	Catalase Reaction	Growth at Different Temperatures	
					10 °C	45 °C
L1	Spherical	+	+	-	-	-
L2	Spherical	+	+	-	-	-
L3	Spherical	+	+	-	-	-
L4	Spherical	+	+	-	-	-
L5	Spherical	+	+	-	-	-
L6	Spherical	+	+	-	-	-
L7	Spherical	+	+	-	-	-
L8	Spherical	+	+	-	-	-
L9	Spherical	+	+	-	-	-
L10	Spherical	+	+	-	-	-
L11	Spherical	+	+	-	-	-
L12	Spherical	+	+	-	-	-
L13	Spherical	+	+	-	-	-
L14	Spherical	+	+	-	-	-
L15	Spherical	+	+	-	-	-
L16	Spherical	+	+	-	-	-
L17	Rod	+	+	-	-	-
L18	Rod	+	+	-	-	-

+ = positive reaction    - = negative reaction.

**Table S2.** Carbohydrate fermentation profile of lactic acid bacteria isolated from fermented carrot and ginger brine.

[illegible]

[illegible]

Starch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
Glycogen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
Xylitol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gentiobiose	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-
D-Turanose	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+
D-Lyxose	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-Tagatose	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
D-Fucose	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L-Fucose	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-Arabitol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L-Arabitol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium Gluconate	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-
Potassium 2-Ketogluconate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium 5-Ketogluconate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Identification %	95.6	95.6	98.5	98.5	98.5	99.6	99.8	99.8	95.6	99.6	99.8	98.5	98.5	95.6	95.6	95.6	-	-	-

Isolates L1–L16 = *Leuconostoc mesenteroides* subsp. *Mesenteroides*; isolate L17 = *Bacillus pumilus*; isolate L18 = *Bacillus licheniformis*.