

Supplementary Materials

Table S1. Primers for resistance genes

Gene	Primers (5'-3')	Amplicon size (bp)	Temp . (°C)
<i>blaZ</i>	<i>blaZ</i> -F: ACTTCAACACCTGCTGCTTTC <i>blaZ</i> -R: TAGGTTTCAGATTGGCCCTTAG	240	58
<i>mecA</i>	<i>mecA</i> -F: GGGATCATAGCGTCATTATTC <i>mecA</i> -R: AGTTCTGCAGTACCGGATTTGC		
<i>aph(3'')-III</i>	<i>aph(3'')-III</i> -F: GCCGATGTGGATTGCGAAAA <i>aph(3'')-III</i> -R: GCTTGATCCCCAGTAAGTCA	292	52
<i>ant(2'')-I</i>	<i>ant(2'')-I</i> -F: GGGCGCGTCATGGAGGAGTT <i>ant(2'')-I</i> -R: TATCGCGACCTGAAAGCGGC		
<i>aph(3'')-I</i>	<i>aph(3'')-I</i> -F: AACGTCTTGCTCGAGGCCGCG <i>aph(3'')-I</i> -R: GGCAAGATCCTGGTATCGGTCTGCG	670	68
<i>aac(6')-aph(2'')</i>	<i>aac(6')-aph(2'')</i> -F: CCAAGAGCAATAAGGGCATA <i>aac(6')-aph(2'')</i> -R: CACTATCATAACCACTACCG		
<i>aph(3')-IIIa</i>	<i>aph(3')-IIIa</i> -F: GCCGATGTGGATTGCGAAAA <i>aph(3')-IIIa</i> -R: GCTTGATCCCCAGTAAGTCA	220	55
<i>str</i>	<i>str</i> -F: ATGGAATTATTTCCACCTGA <i>str</i> -R: TCAAAACCCCTATTAAAGCC		
<i>ant(6)-Ia</i>	<i>ant(6)-Ia</i> -F: ACTGGCTTAATCAATTTGGG <i>ant(6)-Ia</i> -R: GCCTTTCCGCCACCTCACCG	386	50
<i>tet(W)</i>	<i>tet(W)</i> -F: GAGAGCCTGCTATATGCCAGC <i>tet(W)</i> -R: GGGCGTATCCACAATGTTAAC		
<i>tet(M)</i>	<i>tet(M)</i> -F: GTTAAATAGTGTCTTGGAG <i>tet(M)</i> -R: CTAAGATATGGC TCTAACAA	168	53
<i>catA</i>	<i>catA</i> -F: GGATATGAAATTTATCCCTC <i>catA</i> -R: CAATCATCTACCCTATGAAT		
<i>lnu(A)</i>	<i>lnu(A)</i> -F: GGTGGCTGGGGGGTAGATGTATTAAGTGG <i>lnu(A)</i> -R: GCTTCTTTTGAAATACATGGTATTTTTTCGATC	323	55
<i>lnu(B)</i>	<i>lnu(B)</i> -F: CCTACCTATTGTTTGTGGAA <i>lnu(B)</i> -R: ATAACGTTACTCTCCTATTTTC		
<i>erm(B)</i>	<i>erm(B)</i> -F: GAAAAGGTACTCAACCAAATA <i>erm(B)</i> -R: AGTAACGGTACTTAAATTGTTTAC	639	54
<i>erm(C)</i>	<i>erm(C)</i> -F: TCAAAACATAATATAGATAAAA <i>erm(C)</i> -R: GCTAATATTGTTTAAATCGTCAAT		
<i>vanX</i>	<i>vanX</i> -F: TCGCGGTAGTCCCACCATTCGTT <i>vanX</i> -R: AAATCATCGTTGACCTGCGTTAT	454	55
<i>vanA</i>	<i>vanA</i> -F: TCTGCAATAGAGATAGCCGC <i>vanA</i> -R: GGAGTAGCTATCCCAGCATT		
<i>rpoB</i>	<i>rpoB</i> -F: TAACCGTGGTGCTTGGCTDGAATWYGAAAC <i>rpoB</i> -R: ATCAAACCAATGTTAGGNCCTTCWGGDGTTC	1100	59

Table S2. Identification results of lactic acid bacteria (LAB)

Strain Number	Identification results
2-1	<i>Lactobacillus plantarum</i>
5-1	<i>Lactobacillus plantarum</i>
8-1	<i>Lactobacillus plantarum</i>
16-1	<i>Lactobacillus plantarum</i>
21-1	<i>Lactobacillus plantarum</i>
24-1	<i>Lactobacillus plantarum</i>
27-1	<i>Lactobacillus plantarum</i>
33-3	<i>Lactobacillus plantarum</i>
3-2	<i>Lactobacillus alimentarius</i>
7-4	<i>Lactobacillus alimentarius</i>
10-1	<i>Lactobacillus alimentarius</i>
13-4	<i>Lactobacillus alimentarius</i>
19-2	<i>Lactobacillus alimentarius</i>
25-1	<i>Lactobacillus alimentarius</i>
28-1	<i>Lactobacillus alimentarius</i>
29-1	<i>Lactobacillus alimentarius</i>
7-2	<i>Lactobacillus pentosus</i>
16-4	<i>Lactobacillus pentosus</i>
19-1	<i>Lactobacillus pentosus</i>
21-3	<i>Lactobacillus pentosus</i>
9-3	<i>Lactobacillus pentosus</i>
5-4	<i>Lactobacillus hilgardii</i>
9-1	<i>Lactobacillus namurensis</i>
21-4	<i>Lactobacillus harbinensis</i>
21-5	<i>Pediococcus ethanolidurans</i>
17-1	<i>Weissella hellenica</i>

Table S3. Sensory evaluation score of Zao pepper with different LAB

Strain	Sense				
	Spicy	Sourness	Color	Crispness	Smell
<i>L. plantarum</i> 5-1	5	5	4	5	5
<i>L. plantarum</i> 21-1	4	4	5	5	5
<i>L. plantarum</i> 2-1	4	4	5	5	4
<i>L. alimentarius</i> 19-2	4	4	4	3	4
<i>L. alimentarius</i> 10-1	4	5	3	2	4
<i>L. alimentarius</i> 13-4	3	3	4	3	4
<i>L. hilgardii</i> 5-4	3	4	4	3	3
<i>L. pentosus</i> 7-2	4	4	3	3	3
<i>L. plantarum</i> 27-1	3	3	4	3	3
<i>L. alimentarius</i> 28-1	3	3	4	3	3
<i>L. alimentarius</i> 7-4	4	3	3	2	4
<i>L. plantarum</i> 33-3	4	3	3	2	3
<i>P. ethanolidurans</i> 21-5	4	3	4	1	3
<i>L. plantarum</i> 16-1	4	3	3	1	3
<i>L. alimentarius</i> 25-1	3	3	3	1	3
<i>L. pentosus</i> 19-1	4	3	3	2	1
<i>L. pentosus</i> 16-4	3	3	3	2	1
<i>L. harbinensis</i> 21-4	3	3	3	1	2
<i>L. plantarum</i> 8-1	1	2	4	1	2
<i>L. plantarum</i> 24-1	1	2	4	1	2
<i>L. namurensis</i> 9-1	3	3	2	1	1
<i>W. hellenica</i> 17-1	3	2	1	3	1
<i>L. alimentarius</i> 3-2	2	1	3	2	1
<i>L. pentosus</i> 21-3	1	2	4	1	1
<i>L. alimentarius</i> 29-1	1	1	1	1	1
<i>L. paracasei</i> 9-3	1	1	1	1	1

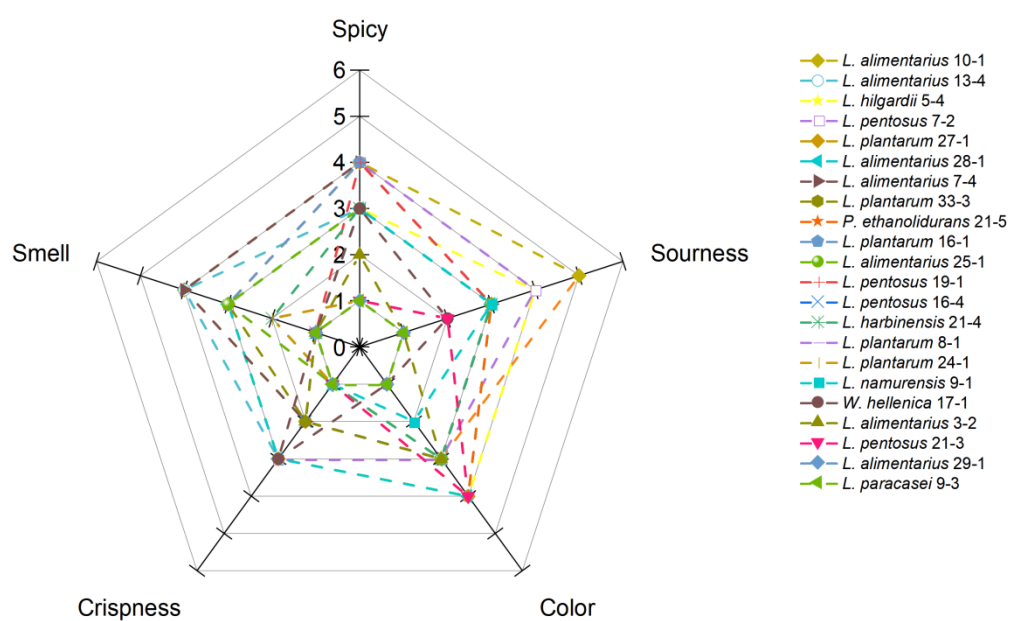


Figure S1. Comparing radar charts for sensory evaluation data of 22 LAB from Zao pepper. Each Zao pepper samples fermented for 30 days.

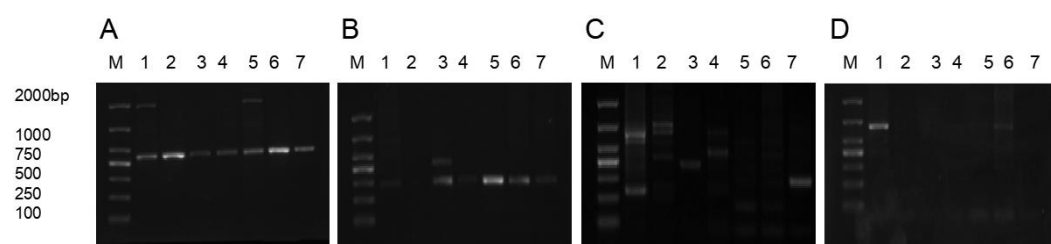


Figure S2. Validation of the resistance gene . The picture shows the PCR amplification results, **(A)** *vanX* (454 bp); **(B)** *aph3'''III* (292 bp); **(C)** *ant 6-Ia* (386 bp); **(D)** *aph3'''I* (670 bp).
M: Marker DL 2000; lane 1: *L. plantarum* 2-1; lane 2: *L. plantarum* 5-1; lane 3: *L. alimentarius* 19-2;
lane 4: *L. plantarum* 21-1; lane 5: *L. brevis* CICC 24450; lane 6: *L. brevis* CICC 6239; lane 7: *L. fructivorans* CGMCC 1.2427.