

*Supplementary data*

# **Identification of lactic acid bacteria isolated from raw cows' milk producing bacteriocins active against *Listeria monocytogenes* using a combination of screening tools**

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**Supplementary Table S1:** Identification of bacteria isolated from raw cow milk by 16S rDNA sequencing and MALDI-Biotyping.

Isolate	16S rRNA gene sequencing		MALDI-Biotyping		Final identification
	Closest database match	Identity (%)	Closest database match	score	
M1	<i>Pediococcus lolli</i>	100.00	-	1.26	<i>Pediococcus acidilactici</i>
M2	<i>Lactococcus lactis</i>	99.93	<i>Lactococcus lactis</i>	2.10	<i>Lactococcus lactis</i>
M3	<i>Pediococcus lolli</i>	100.00	<i>Pediococcus sp.</i>	2.27	<i>Pediococcus acidilactici</i>
M4	<i>Enterococcus faecium</i>	99.85	<i>Enterococcus faecium</i>	2.16	<i>Enterococcus faecium</i>
M5	<i>Enterococcus faecalis</i>	100.00	<i>Enterococcus faecalis</i>	2.13	<i>Enterococcus faecalis</i>
M6	<i>Lactococcus garvieae</i>	100.00	<i>Lactococcus garvieae</i>	1.89	<i>Lactococcus garvieae</i>
M7	<i>Lactococcus lactis</i>	99.78	<i>Lactococcus lactis</i>	2.38	<i>Lactococcus lactis</i>
M8	<i>Lactococcus garvieae</i>	100.00	<i>Lactococcus garvieae</i>	2.09	<i>Lactococcus garvieae</i>
M9	<i>Enterococcus faecium</i>	99.02	<i>Enterococcus faecium</i>	2.36	<i>Enterococcus faecium</i>
1	<i>Lactococcus lactis</i>	99.82	<i>Lactococcus lactis</i>	2.25	<i>Lactococcus lactis</i>
2	<i>Leuconostoc citreum</i>	99.79	<i>Leuconostoc citreum</i>	2.07	<i>Leuconostoc citreum</i>
3	<i>Leuconostoc citreum</i>	100.00	-	1.63	<i>Leuconostoc citreum</i>
5	<i>Lactococcus lactis</i>	100.00	<i>Lactococcus lactis</i>	2.31	<i>Lactococcus lactis</i>
6	<i>Lactococcus garvieae</i>	99.20	<i>Lactococcus garvieae</i>	1.92	<i>Lactococcus garvieae</i>
7	<i>Lactococcus garvieae</i>	99.93	<i>Leuconostoc citreum</i>	1.88	<i>Leuconostoc citreum</i>
9	<i>Lactococcus garvieae</i>	99.76	<i>Lactococcus garvieae</i>	1.73	<i>Lactococcus garvieae</i>
10	<i>Weissella paramesenteroides</i>	99.93	<i>Lactococcus garvieae</i>	1.80	<i>Weissella paramesenteroides</i>
11	<i>Lactococcus garvieae</i>	100.00	<i>Lactococcus garvieae</i>	2.00	<i>Lactococcus garvieae</i>
12	<i>Lactococcus garvieae</i>	99.64	<i>Lactococcus garvieae</i>	2.04	<i>Lactococcus garvieae</i>
13	<i>Pediococcus lolli</i>	99.85	-	1.59	<i>Pediococcus acidilactici</i>
14	<i>Corynebacterium glutamicum</i>	99.52	<i>Corynebacterium glutamicum</i>	1.87	<i>Corynebacterium glutamicum</i>
15	<i>Enterococcus italicus</i>	100.00	<i>Enterococcus italicus</i>	1.78	<i>Enterococcus italicus</i>
16	<i>Corynebacterium glutamicum</i>	99.83	-	1.35	<i>Corynebacterium glutamicum</i>
17	<i>Lactococcus garvieae</i>	99.93	-	1.45	<i>Lactococcus garvieae</i>
18	<i>Lactococcus lactis</i>	99.72	<i>Lactococcus lactis</i>	2.08	<i>Lactococcus lactis</i>

**Table S1:** Continued.

Isolate	16S rRNA gene sequencing		MALDI-Biotyping		Final identification
	Closest database match	Identity (%)	Closest database match	score	
19	<i>Leuconostoc citreum</i>	100.00	-	1.36	<i>Leuconostoc citreum</i>
20	<i>Lactococcus lactis</i>	97.57	-	1.32	<i>Lactococcus lactis</i>
21	<i>Lactococcus lactis</i>	100.00	-	0.00	<i>Lactococcus lactis</i>
22	<i>Lactococcus lactis</i>	98.83	<i>Weissella paramesenteroides</i>	2.07	<i>Lactococcus lactis</i>
23	<i>Enterococcus faecalis</i>	97.85	<i>Enterococcus faecalis</i>	2.31	<i>Enterococcus faecalis</i>
24	<i>Lactococcus lactis</i>	100.00	<i>Lactococcus garvieae</i>	1.83	<i>Lactococcus garvieae</i>
25	<i>Lactococcus lactis</i>	100.00	<i>Lactococcus lactis</i>	2.20	<i>Lactococcus lactis</i>
26	<i>Lactococcus garvieae</i>	99.93	-	1.48	<i>Lactococcus garvieae</i>
27	<i>Pediococcus lolli</i>	99.65	-	1.44	<i>Pediococcus acidilactici</i>
28	<i>Leuconostoc citreum</i>	100.00	<i>Leuconostoc citreum</i>	1.96	<i>Leuconostoc citreum</i>
29	<i>Weissella paramesenteroides</i>	99.93	-	1.35	<i>Weissella paramesenteroides</i>
30	<i>Leuconostoc citreum</i>	100.00	<i>Leuconostoc citreum</i>	1.79	<i>Leuconostoc citreum</i>
32	<i>Enterococcus faecalis</i>	99.81	<i>Enterococcus faecalis</i>	2.30	<i>Enterococcus faecalis</i>
33	<i>Weissella paramesenteroides</i>	99.42	-	1.66	<i>Weissella paramesenteroides</i>
34	<i>Enterococcus faecalis</i>	99.62	<i>Lactococcus garvieae</i>	1.86	<i>Enterococcus faecalis</i>
35	<i>Lactococcus petauri</i>	99.82	<i>Lactococcus garvieae</i>	1.73	<i>Lactococcus garvieae</i>
36	<i>Lactococcus lactis</i>	99.82	<i>Lactococcus lactis</i>	2.26	<i>Lactococcus lactis</i>
37	<i>Lactococcus lactis</i>	100.00	<i>Lactococcus lactis</i>	2.08	<i>Lactococcus lactis</i>
38	<i>Lactococcus lactis</i>	99.34	<i>Lactococcus lactis</i>	2.19	<i>Lactococcus lactis</i>
39	<i>Enterococcus faecalis</i>	99.91	<i>Lactococcus garvieae</i>	1.72	<i>Enterococcus faecalis</i>
40	<i>Lactococcus garvieae</i>	99.70	<i>Lactococcus garvieae</i>	1.82	<i>Lactococcus garvieae</i>
41	<i>Lactococcus lactis</i>	99.85	<i>Lactococcus lactis</i>	2.34	<i>Lactococcus lactis</i>
50	<i>Lactococcus garvieae</i>	99.85	<i>Candida kefyr</i>	2.11	<i>Lactococcus garvieae</i>
51	<i>Leuconostoc citreum</i>	99.93	-	1.59	<i>Leuconostoc citreum</i>
52	<i>Weissella paramesenteroides</i>	99.71	<i>Weissella paramesenteroides</i>	2.06	<i>Weissella paramesenteroides</i>
53	<i>Weissella paramesenteroides</i>	99.93	<i>Weissella paramesenteroides</i>	1.81	<i>Weissella paramesenteroides</i>
54	<i>Weissella paramesenteroides</i>	99.85	<i>Weissella paramesenteroides</i>	2.10	<i>Weissella paramesenteroides</i>

**Table S1:** Continued.

Isolate	16S rRNA gene sequencing		MALDI-Biotyping		Final identification
	Closest database match	Identity (%)	Closest database match	score	
55	<i>Weissella paramesenteroides</i>	99.93	<i>Weissella paramesenteroides</i>	2.02	<i>Weissella paramesenteroides</i>
56	<i>Lactococcus petauri</i>	99.16	<i>Candida kefyr</i>	2.37	<i>Lactococcus garvieae</i>
57	<i>Lactococcus lactis</i>	99.91	<i>Lactococcus lactis</i>	2.24	<i>Lactococcus lactis</i>
pos	<i>Pediococcus lolii</i>	99.86	<i>Pediococcus sp</i>	2.00	<i>Pediococcus acidilactici</i>