

1 **Supplemental: Emerging public health challenges of *Listeria monocytogenes* isolated from**
2 **different ecological niches in Egypt: Food, humans, animals and environment**

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Table S1. Pathogenicity profiles of *Listeria monocytogenes* recovered from different samples

Source of samples	n. of recovered isolates	Serotype	Pathogenicity profile																			
			CAM P (+/-) with S/R	PI-PL C	Anton's eye test	Mice lethality	Chick-embryo lethality	Vero cell ingestion assay	Biofilm					Virulence genes								
									CT	MPA (O.D.)	<i>prfA</i>	<i>hlyA</i>	<i>PLcA</i>	<i>pLcB</i>	<i>Iap</i>	<i>actA</i>	<i>flaA</i>	<i>InlA</i>	<i>InlB</i>	<i>InlC</i>	<i>InlJ</i>	
Reference strain (ATCC 7494)	4	4	+/-	+	+	+	+	++	Strong	Strong (0.16)	+	+	+	+	+	+	+	+	+	+	+	+
She-camel milk	1	4	+/-	+	+	+	+	++	Strong	Very Strong (0.56)	+	+	+	+	+	+	+	+	+	+	+	+
Buffalo milk	1	1	+/-	+	+	+	+	++	Moderate	Strong (0.15)	+	+	+	+	+	+	+	+	+	+	+	+
Cow milk	2	1	+/-	+	+	+	+	++	Strong	Strong (0.13)	+	+	+	+	+	+	+	+	+	+	+	+
		4	+/-	+	+	+	+	++	Strong	Strong (0.14)	+	+	+	+	+	+	+	+	+	+	+	+
Goat milk	2	1	+/-	+	+	+	+	++	Moderate	Very Strong (0.21)	+	+	+	+	+	+	+	+	+	+	+	ND
		4	+/-	+	+	+	+	++	Strong	Strong (0.14)	+	+	+	+	+	+	+	+	+	+	+	+
Ewe milk	1	4	+/-	+	+	+	+	++	Strong	Strong (0.12)	+	+	+	+	+	+	+	+	+	+	+	ND
Silage	3	4	+/-	+	+	+	+	++	Strong	Strong (0.14)	+	+	+	+	+	+	+	+	+	+	+	+
		4	+/-	+	+	+	+	++	Strong	Strong (0.14)	+	+	+	+	+	+	+	ND	+	+	+	+
		4	+/-	+	+	+	+	++	Strong	Strong (0.14)	+	+	+	+	+	+	+	ND	+	+	+	+
Rabbits brain	1	4	+/-	+	+	+	+	++	Strong	Strong (0.14)	+	+	+	+	+	+	+	+	ND	ND	+	ND

CAMP: Christie, Atkins, Munch-Petersen test; S/R: *Staphylococcus aureus*/*Rhodococcusequi*; PI-PLC: phosphatidylinositol-specific phospholipase C; O.D.: Optical Density; O.D. ₅₉₅<0.1= Weak; O.D. ₅₉₅ ≤0.1= Strong; O.D. ₅₉₅>1= Very Strong; CT, Christensen's tube; MPA, Microtiter plate assay; ND, not detected

Table S1 cont . Pathogenicity profiles of *Listeria monocytogenes* recovered from different samples

Source of samples	n= of recovered isolates	Serotype	Pathogenicity profile																					
			CAMP (+/-) with S/R	PI-PLC	Anton's eye test	Mice lethality	Chick-embryo lethality	Vero cell ingestion assay	Biofilm		Virulence genes													
									CT	MPA (O.D.)	<i>prfA</i>	<i>hlyA</i>	<i>PLC-A</i>	<i>pLcB</i>	<i>lsp</i>	<i>actA</i>	<i>flaA</i>	<i>InlA</i>	<i>InlB</i>	<i>InlC</i>	<i>InlJ</i>			
Kariesh cheese	1	4	+/-	+	+	+	+	++	Strong	Strong (0.16)	+	+	+	+	+	+	+	ND	+	+	+			
Hamburger	1	4	+/-	+	+	+	+	++	Strong	Very Strong (0.56)	+	+	+	+	+	+	+	ND	+	+	+			
Broilers	3	1	+/-	+	+	+	+	++	Strong	Strong (0.13)	+	+	+	+	+	+	+	ND	ND	ND	ND	+		
		4	+/-	+	+	+	+	++	Strong	Strong (0.14)	+	ND	+	+	+	+	+	+	ND	ND	ND	ND		
		4	+/-	+	+	+	+	++	Strong	Strong (0.14)	+	+	+	+	+	+	+	+	+	+	+	ND	+	
Layers	3	1	+/-	+	+	+	+	++	Moderate	Very Strong (0.21)	+	+	+	+	+	+	+	+	+	+	ND	+		
		4	+/-	+	+	+	+	++	Strong	Strong (0.14)	+	+	+	+	+	+	+	+	+	+	+	ND	ND	
		4	+/-	+	+	+	+	++	Strong	Strong (0.17)	+	+	+	+	+	+	+	+	ND	ND	ND	ND		
Table eggs		1	+/-	+	+	+	+	++	Moderate	Strong (0.15)	+	+	+	+	+	+	+	+	+	+	+	+	ND	
Ducks	1	1	+/-	+	+	+	+	++	Moderate	Strong (0.15)	+	+	+	+	+	+	+	+	+	+	+	+	+	
Aborted Goat fetal liver	1	1	+/-	+	+	+	+	++	Strong	Strong (0.17)	+	ND	+	+	+	+	+	ND	+	+	+	+	+	
Septicemic ewe	1	4	+/-	+	+	+	+	++	Strong	Strong (0.17)	+	+	+	+	+	+	+	+	+	+	+	+	+	
Septicemic women	1	4	+/-	+	+	+	+	++	Strong	Strong (0.17)	+	+	+	+	+	+	+	+	+	+	+	+	+	
Frozen fish	1	4	+/-	+	+	+	+	++	Strong	Strong (0.14)	+	+	+	+	+	+	+	+	ND	ND	ND	+	+	
		4	+/-	+	+	+	+	++	Strong	Strong (0.17)	+	+	+	+	+	+	+	+	+	+	+	ND	ND	
Herring	1	1	+/-	+	+	+	+	++	Moderate	Strong (0.15)	+	+	+	+	+	+	+	+	+	+	+	+	+	ND

CAMP: Christie, Atkins, Munch-Petersen test; S/R: *Staphylococcus aureus/Rhodococcusequi*; PI-PLC: phosphatidylinositol-specific phospholipase C; DLABN: DL-alanine-b-naphthylamide HCl; DAPN: D-alanine-p-nitroanilide; O.D.: Optical Density; O.D.₅₉₅<0.1= Weak; O.D.₅₉₅≤0.1= Strong; O.D.₅₉₅>1= Very Strong; CT, Christensen's tube; MPA, Microtiter plate assay; ND, not detected

Table S2. Antibiogram for *L. monocytogenes* isolates

n=	Source	Ampicillin	Amoxicillin/clavulanic	Amoxicillin	Penicillin G	Cloxacillin	Oxacillin	Ofloxacin	Enrofloxacin	Ciprofloxacin	Flumequine	Pefloxacin	Amikacin	Gentamicin	Kanamycin	Neomycin	Streptomycin	Chloramphenicol	Tetracycline	Sulpha-trimethoprim	Cefotaxime	Cephalothin	Lincomycin	Clindamycin	Bacitracin	Vancomycin	Erythromycin	Spiramycin	Rifamycin	MAR _{index}
1	Cow milk	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	S	S	R	R	R	R	R	S	S	S	S	0.28
2	Cow milk	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	S	S	R	R	R	R	R	S	S	S	S	0.28
3	Buffalo milk	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	S	S	R	R	R	R	R	S	S	S	S	0.28
4	She-camel milk	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	S	S	R	R	R	R	R	S	S	S	S	0.28
5	Ewe milk	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	S	S	R	R	R	R	R	S	S	S	S	0.28
6	Goat milk	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	R	S	R	R	R	R	R	S	S	S	S	0.3
7	Goat milk	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	R	S	R	R	R	R	R	S	S	S	S	0.3
8	Kariesh cheese	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	R	S	R	R	R	R	R	S	S	S	S	0.3
9	Hamburger	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	R	S	R	R	R	R	R	S	S	S	S	0.3
10	Broilers	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	R	S	R	R	R	R	R	S	S	S	S	0.3
11	Broilers	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	R	S	R	R	R	R	R	S	S	S	S	0.36
12	Broilers	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	R	R	R	R	R	R	R	S	S	S	S	0.36
13	Layers	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	R	R	R	R	R	R	R	S	S	S	S	0.36
14	Layers	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	R	R	R	R	R	R	R	S	S	S	S	0.36
15	Layers	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	R	R	R	R	R	R	R	S	S	S	S	0.36
16	Table eggs	S	S	S	S	S	S	S	S	S	R	R	S	S	S	R	S	R	S	S	R	R	R	R	R	S	S	S	S	0.36
17	Duck spleen	S	S	S	S	S	S	S	S	S	R	R	S	S	S	R	S	R	S	S	R	R	R	R	R	S	S	S	S	0.3
18	Silage	S	S	S	S	S	S	S	S	S	R	R	S	S	S	R	S	R	S	S	R	R	R	R	R	S	S	S	S	0.3
19	Silage	S	S	S	S	S	S	S	S	S	R	R	S	S	S	R	R	R	S	S	R	R	R	R	R	S	S	S	S	0.36
20	Silage	S	S	S	S	S	S	S	S	S	R	R	S	S	S	R	R	R	R	R	R	R	R	R	R	S	S	S	S	0.4
21	Goat fetal liver	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	R	R	R	R	R	R	R	S	S	S	S	0.36
22	Sheep blood (Septicemia)	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	R	R	R	R	R	R	R	S	S	S	S	0.36
23	Human blood (Septicemia)	S	S	S	S	S	S	S	S	S	R	R	S	S	S	R	S	R	R	R	R	R	R	R	R	S	R	S	S	0.43
24	Frozen fish	S	S	S	S	S	S	S	S	S	R	R	S	S	S	R	S	R	S	R	R	R	R	R	R	S	R	S	S	0.4
25	Frozen fish	S	S	S	S	S	S	S	S	S	R	R	S	S	S	R	S	R	R	R	R	R	R	R	R	S	S	S	S	0.4
26	Herring	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	R	S	R	R	R	R	R	S	S	S	S	0.3
27	Rabbit brain tissue	S	S	S	S	S	S	S	S	S	R	R	S	S	S	S	S	R	R	S	R	R	R	R	R	S	S	S	S	0.3

Table S3: PCR Primers and references for 16S rRNA of *Listeria* and virulence genes

Name	Amplicon Size (bp)	Primer Sequence	References
16S rRNA	938	F: 5'-CAG-CMG-CCG-CGG-TAA-TWC-3' R: 5'-CTC-CAT-AAA-GGT-GAC-CCT-3'	Vazquez-Boland et al. [1]
<i>prfA</i>	571	F: 5'-CCCCAAGTAGCAGGACATGCTAA-3' R: 5'-GTATCACAAAGCTCACGAG-3'	Cooray et al. [2]
<i>hlyA</i>	702	F: 5'-CCTAAGACGCCAATCGAA-3' R: 5'-AAGCGCTTGCAACTGCTC-3'	Mengaud et al. [3]
<i>inlA</i>	800	F: 5'-ATTATGCCAAGTGGTTACGGA-3' R: 5'-ATCTGTTTGCAGACCGTGTC-3'	Liu et al. [4]
<i>inlB</i>	500	F: 5'-CATGGGAGAGTAACCCAACC-3' R: 5'-GCGGTAACCCCTTTGTCATA-3'	Zhang and Knabel [5]
<i>InlC</i>	400	F: 5'-CCCACAATCAAATAAGTGACCTT-3' R: 5'-CTGGGTCTTTGACAGTATTTGTT-3'	
<i>InlJ</i>	238	F: 5'-TGTAACCCCGCTTACACAGTT-3' R: 5'-AGCGGCTTGGCAGTCTAATA-3'	Liu et al. [4]
<i>plcA</i>	1484	F: 5'-CTGCTTGAGCGTTCATGTCTCATCCCC-3' R: 5'-ATGGGTTTCACTCTCCTTCTAC-3'	Notermans et al. [6]
<i>plcB</i>	795	F: 5'-GCAAGTGTCTAGTCTTTCCGG-3' R: 5'-ACCTGCCAAAGTTTGCTGTGA-3'	Cooray et al. [2]
<i>actA</i>	839	F: 5'-CGCCGCGGAAATTAATAAAGA-3' R: 5'-ACGAAGGAACCGGGCTGCTAG-3'	Suarez et al. [7]
<i>Iap</i>	131	F: 5'-ACAAGCTGCACCTGTTGCAG-3' R: 5'-TGACAGCGTGTGTAGTAGCA-3'	Furrer et al. [8]
<i>flaA</i>	420	F: 5'-AGCTCTTAGCTCCATGAGTT-3' R: 5'-AGTAGCAGCACCTGTAGCAGT-3'	Gray and Kroll [9]

Data S1: Fasta formatted alignments of sequences obtained from MEGA7

>NH1
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>She-camel_Milk_KP271936

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>Ewe_Milk_KP271937

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>Kariesch_cheese_KP271940

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>Hamburger_KP271941

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>Broilers_KP271942

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