

Bioactivity of Essential Oils for Mitigation of *Listeria monocytogenes* Isolated from Fresh Retail Chicken Meat

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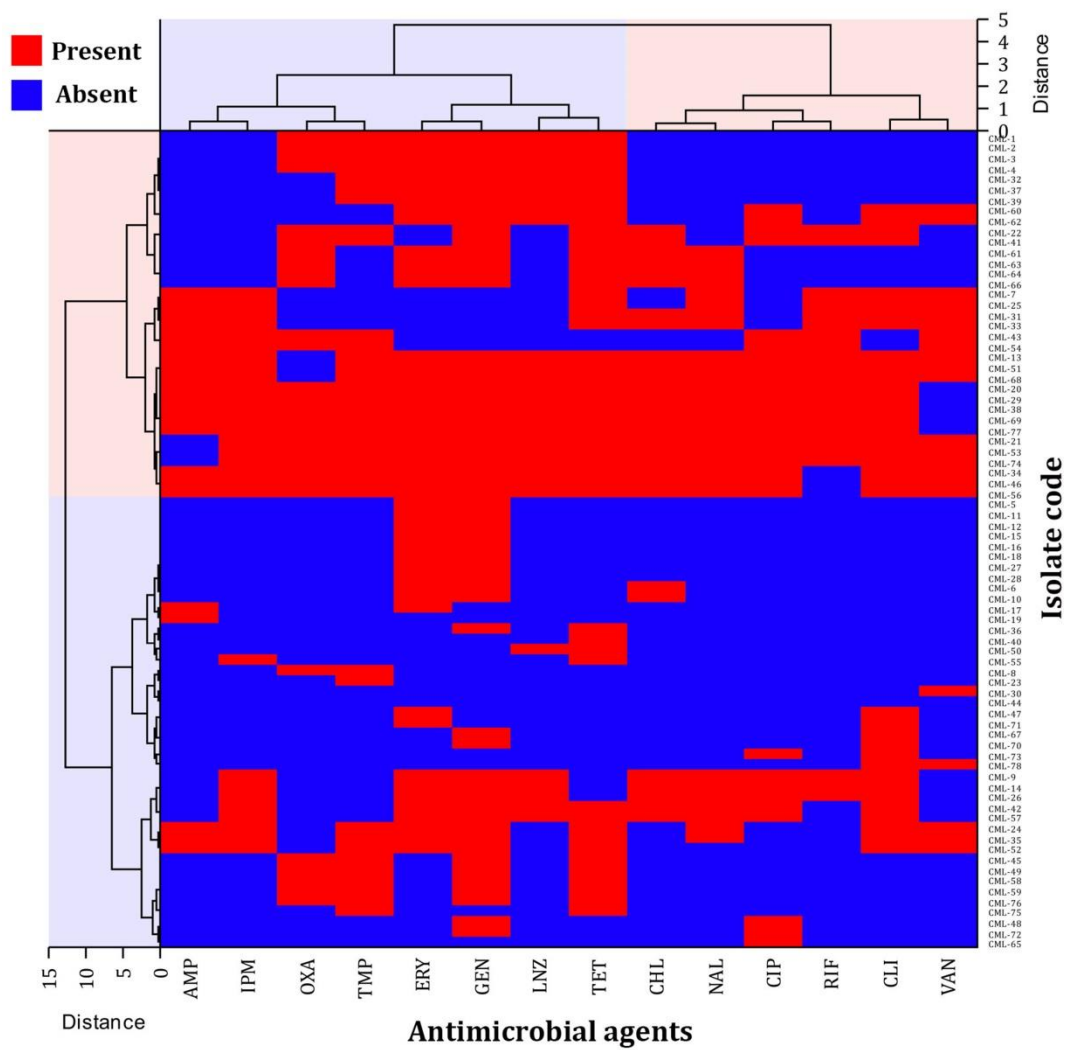


Figure S1. Clustering analysis for selecting the MDR *L. monocytogenes* strains.

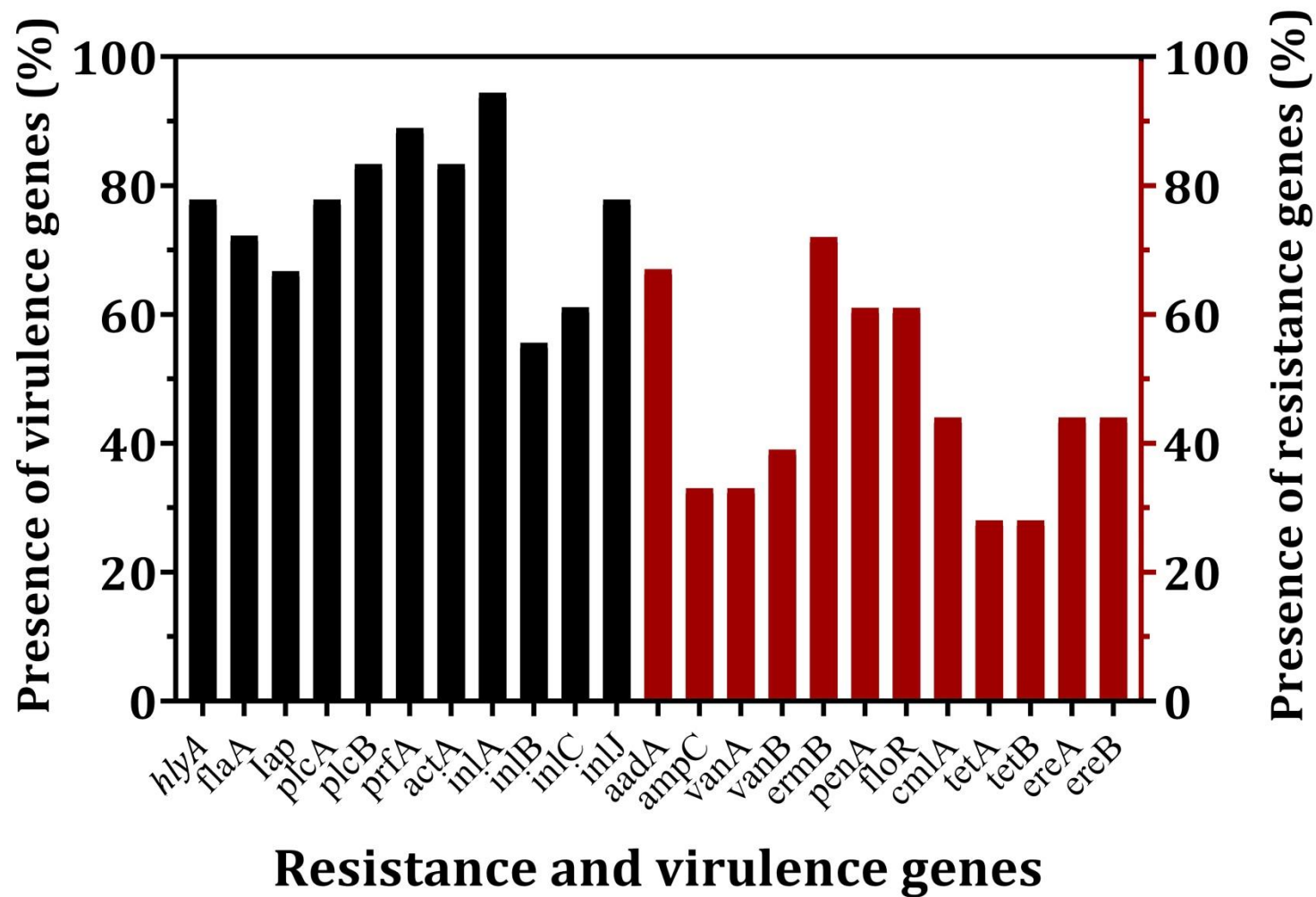


Figure S2. Incidence of resistance and virulence gene in MDR *L. monocytogenes* strains.

Table S1. Antimicrobial agents, zone and interpretive chart.

Class	Antibiotics	Abbreviation	Concentration (µg/disc)	Interpretive categories and zone diameter breakpoints (mm)		
				S	I	R
Penicillins	Ampicillin	AMP	10	≥17	14-16	≤13
Phenicols	Chloramphenicol	CHL	30	≥ 18	13-17	≤ 12
Fluoroquinolone	Ciprofloxacin	CIP	5	≥21	16-20	≤15
Lincosamides	Clindamycin	CLI	2	≥ 21	15-20	≤ 14
Macrolides	Erythromycin	ERY	15	≥ 23	14-22	≤ 13
Aminoglycosides	Gentamicin	GEN	120	≥ 15	13-14	≤ 12
Carbapenems	Imipenem	IPM	10	≥ 19	16-18	≤ 15
oxazolidinones	Linezolid	LNZ	30	≥ 21	-	≤ 20
Quinolone	Nalidixic acid	NAL	30	≥19	14-18	≤13
B-lactam	Oxacillin	OXA	1	≥18	-	≤17
Ansamycins	Rifampicin	RIF	5	≥ 20	17-19	≤ 16
Tetracyclines	Tetracycline	TET	30	≥ 19	15-18	≤ 14
Folate pathway inhibitors	Trimethoprim	TMP	5	≥16	11-15	≤10
Iclaprim						
Glycopeptides	Vancomycin	VAN	30	≥17	15-16	≤14

Table S2. PCR Primers and references for 16S rRNA of *L. monocytogenes* and virulence genes.

Target gene	Sequence (5'-3')	Amplified product (bp)	Reference
16S rRNA	F: GGACCGGGGCTAATACCGAATGATAA R: TTCATGTAGGCGAGTTGCAGCCTA	1200	28
Listeriolysin O	<i>HlyA</i> F: CCT AAG ACG CCA ATC GAA R: AAG CGC TTG CAA CTG CTC	702	29
Flagellin protein	<i>flaA</i> F: AGCTCTTAGCTCCATGAGTT R: AGTAGCAGCACCTGTAGCAGT	420	30
Adhesion protein	<i>Iap</i> F: ACAAGCTGCACCTGTTGCAG R: TGACAGCGTGTGTAGTAGCA	131	31
LIPI-1 pathogenicity island	<i>plcA</i> F: CTGCTTGAGCGTTCATGTCTCATCCCCC R: ATGGGTTTCACTCTCCTTCTAC	1484	32
	<i>plcB</i> F: GCAAGTGTTCTAGTCTTTCCGG R: ACCTGCCAAAGTTTGCTGTGA	795	33
	<i>prfA</i> F: CCCCAAGTAGCAGGACATGCTAA R: GTATCACAAAGCTCACGAG	571	
	<i>actA</i> F: CGCCGCGGAAATTAAAAAAGA R: ACGAAGGAACCGGGCTGCTAG	839	34
Internalin proteins	<i>inlA</i> F: ATTATGCCAAGTGTTACGGA R: ATCTGTTTGCGAGACCGTGTC	800	35
	<i>inlB</i> F: CATGGGAGAGTAACCCAACC R: GCGGTAACCCCTTTGTCATA	500	35
	<i>inlC</i> F: CCCACAATCAAATAAGTGACCTT R: CTGGGTCTTTGACAGTATTTGTT	400	
	<i>inlJ</i> F: TGTAACCCCGCTTACACAGTT R: AGCGGCTTGGCAGTCTAATA	238	35

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

Target gene	Sequence (5'-3')	Amplified product (bp)	Reference
<i>aadA</i>	F: GTGGATGGCGGCCTGAAGCC R: AATGCCCAGTCGGCAGCG	525	37
<i>ampC</i>	F: TTCTATCAAMACTGGCARCC R: CCYTTTTATGTACCCAYGA	550	
<i>vanA</i>	F: CATGACGTATCGGTAAAATC R: ACCGGGCAGRGTTATTGAC	885	
<i>vanB</i>	F: CATGATGTGTCGGTAAAATC R: ACCGGGCAGRGTTATTGAC	882	
<i>ermB</i>	F: GAAAAGGTACTCAACCAAATA R: AGTAACGGTACTTAAATTGTTTAC	639	38
<i>penA</i>	F: ATCGAACAGGCGACGATGTC R: GATTAAGACGGTGTTTTACGG	500	39
<i>floR</i>	F: TATCTCCCTGTCGTTTCCAG R: AGAACTCGCCGATCAATG	399	40
<i>cmlA</i>	F: CCGCCACGGTGTTGTTGTTATC R: CACCTTGCCTGCCCATCATTAG	698	41
<i>tetA</i>	F: GGCCTCAATTTCCTGACG R: AAGCAGGATGTAGCCTGTGC	372	42
<i>tetB</i>	F: GAGACGCAATCGAATTCGG R: TTTAGTGGCTATTCTTCCTGCC	228	
<i>ereA</i>	F: AACACCCTGAACCCAAGGGACG R: CTTACATCCGGATTCGCTCGA	420	43
<i>ereB</i>	F: AGAAATGGAGGTTCACTTACCA R: CATATAATCATCACCAATGGCA	546	