

Supplementary Data

Survey of colistin resistance in commensal bacteria from *Penaeus vannamei* farms in China

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Table S1. *Bacillus. licheniformis* MLST primer information [53]

Gene	Primer	Sequence(5'to3')	Annealing temperature (°C)	Amplicon size (bp)
<i>adk</i>	<i>adk</i> -F	GGT AAA GGG ACA CAG GCT GA	58	465
	<i>adk</i> -R	TCG AGT AAA GGC TGG GTT TG		
<i>ccpA</i>	<i>ccpA</i> -F	TAT GAT GTA GCA CGC GAA GC	58	561
	<i>ccpA</i> -R	TAT CCC CAA GCG CTC TTT TA		
<i>recF</i>	<i>recF</i> -F	ACG GTT CTG TTC CCA TTC AG	58	561
	<i>recF</i> -R	CAT CAC GGC CAT TGA CAT AG		
<i>rpoB</i>	<i>rpoB</i> -F	AGG TCA ACT AGT TCA GTA TGG	58	495
		ACG		
	<i>rpoB</i> -R	AAG AAC CGT AAC CGG CAA CTT		
<i>spo0A</i>	<i>spo0A</i> -F	GAA GTG CTT GGT GTC GCA TA	58	558
	<i>spo0A</i> -R	TGT GTA GCC GAA AAG TGA CG		
<i>sucC</i>	<i>sucC</i> -F	GGG TCC CGA CGG CCA ACA AA	58	549
	<i>sucC</i> -R	GGC CGG TTC CCC TCC GTA GT		

Table S2. 16sRNA results of some drug-resistant bacteria

Species	Sample site				Total
	Guangdong	Fujian	Jjiangsu	Shandong	
<i>Bacillus</i> spp.	83	92	12	18	205
<i>Enterobacter</i> spp.	13	7	0	0	20
<i>Staphylococcus</i> spp.	4	15	0	1	20
<i>Aeromonas</i> spp.	9	7	4	0	20
<i>Rothia amarae</i>	0	0	2	0	2
<i>Lactococcus garvieae</i>	0	9	5	0	14
<i>Vagococcus</i> sp.	1	0	0	5	6
<i>Arthrobacter</i> sp.	0	0	0	1	1
<i>Proteus</i>	6	2	0	0	8
Other genera	8	36	0	1	45

Table S3. Antibiotic resistance spectra of all tested antibiotics for the 202 tested isolates

Name	Isolation source	Region	Antibiotic resistance spectra	MDR Index
shui14	pond water	China-Shandong	SXT,CTR,FEP,IPM,CIP,AM,CF,GM, MEM,TE,FOS,C	1
GD-23-T	soil	China-Guangdong	IPM,AM,GM,FEP,CTR,TE,SXT,CF,C	0.75
BS4	pond water	China-Fujian	CTR,AM,FEP,SXT,IPM,FOS,CF,C	0.67
BS12	aquafeed	China-Fujian	CTR,AM,FEP,SXT,IPM,FOS,CF,C	0.67
BS13	aquafeed	China-Fujian	CTR,AM,FEP,SXT,IPM,FOS,CF,C	0.67
BS40	aquafeed	China-Fujian	CTR,TE,FEP,SXT,IPM,FOS,CF,C	0.67
GD-HY-S-1-26	pond water	China-Guangdong	IPM,MEM,FOS,AM,GM,SXT,C	0.58
GD-GWCS28	pond water	China-Guangdong	IPM,AM,FEP,CTR,TE,SXT,CF,C	0.67
B-S-6	pond water	China-Guangdong	IPM,MEM,FOS,AM,CTR,TE,CF,C	0.67
BS38	aquafeed	China-Fujian	CTR,AM,FEP,SXT,FOS,CF,C	0.58
BS45	aquafeed	China-Fujian	CTR,AM,FEP,SXT,FOS,CF,C	0.58
tx2-8	shrimp	China-Fujian	CTR,AM,FEP,SXT,FOS,CF,C	0.58
tS41	pond water	China-Fujian	CTR,AM,FEP,SXT,FOS,CF,C	0.58
BS48	aquafeed	China-Fujian	CTR,TE,FEP,SXT,CF,FOS,C	0.58
TS47	pond water	China-Fujian	CTR,TE,FEP,AM,CF,FOS,C	0.58
tt30	soil	China-Fujian	CTR,TE,FEP,SXT,CF,IPM,C	0.58
tx1-18	shrimp	China-Fujian	CTR,AM,FEP,SXT,IPM,CF,C	0.58
tx2-51	shrimp	China-Fujian	CTR,AM,FEP,SXT,IPM,CF,C	0.58
tx2-44	shrimp	China-Fujian	CTR,TE,AM,FEP,SXT,CF,C	0.58
GD-15-T	soil	China-Guangdong	AM,FEP,CTR,TE,SXT,CF,C	0.58

GD-S-9	aquafeed	China-Guangdong	AM,FEP,CTR,TE,SXT,CF,C	0.58
GD-SL-20	aquafeed	China-Guangdong	AM,FEP,CTR,TE,SXT,CF,C	0.58
GD-37-T	soil	China-Guangdong	IPM,AM,FEP,CTR,SXT,C	0.5
GWCS23	pond water	China-Guangdong	FOS,CTR,AM,TE,FEP,C	0.5
BS39	aquafeed	China-Fujian	CTR,TE,AM,SXT,CF,C	0.5
TS58	pond water	China-Fujian	TE,AM,CIP,FOS,CF,C	0.5
tx1-54	shrimp	China-Fujian	CTR,FEP,SXT,IPM,CF,C	0.5
tx2-16	shrimp	China-Fujian	CTR,AM,SXT,IPM,CF,C	0.5
tx2-30	shrimp	China-Fujian	CTR,FEP,SXT,MEM,CF,C	0.5
tS42	pond water	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tt12	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-1	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-2	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-3	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-4	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-15	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-16	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-17	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-20	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-21	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-22	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-24	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5

tx1-25	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-28	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-32	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-36	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-37	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-44	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx1-51	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx2-7	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx2-9	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx2-10	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx2-11	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx2-22	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx2-25	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx2-26	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx2-31	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx2-33	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx2-39	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
tx2-54	shrimp	China-Fujian	CTR,AM,FEP,SXT,CF,C	0.5
GD-3-T	soil	China-Guangdong	AM,FEP,CTR,TE,SXT,CF,C	0.58
JS-YHS52	aquafeed	China-Jiangsu	CTR,AM,FEP,CF,FOS,C	0.5
JS-YHS57	aquafeed	China-Jiangsu	CTR,AM,FEP,CF,FOS,C	0.5
TWS5	aquafeed	China-Jiangsu	CTR,TE,FEP,CF,FOS,C	0.5

JS-TWS15	aquafeed	China-Jiangsu	CTR,AM,FEP,CF,FOS,C	0.5
GD-20-T	soil	China-Guangdong	IPM,FEP,CTR,SXT,C	0.42
GD-T-1	soil	China-Guangdong	AM,FEP,CTR,SXT,CF,C	0.5
GD-SL-16	aquafeed	China-Guangdong	AM,FEP,CTR,SXT,CF,C	0.5
GD-41-T	soil	China-Guangdong	AM,SXT,FEP,CTR,C	0.42
GD-28-T	soil	China-Guangdong	AM,SXT,FEP,CTR,C	0.42
GWCS29	pond water	China-Guangdong	FOS,FEP,CTR,TE,C	0.42
GWCS33	pond water	China-Guangdong	FOS,FEP,CTR,TE,C	0.42
GWCS49	pond water	China-Guangdong	FOS,FEP,CTR,TE,C	0.42
GWCS16	pond water	China-Guangdong	FOS,FEP,CTR,TE,C	0.42
GWCS17	pond water	China-Guangdong	FOS,FEP,CTR,TE,C	0.42
GD-GWCT10	soil	China-Guangdong	FOS,FEP,CTR,TE,C	0.42
GD-50-T	soil	China-Guangdong	AM,FEP,CTR,SXT,C	0.42
TS56	pond water	China-Fujian	CTR,AM,FEP,FOS,C	0.42
TS40	pond water	China-Fujian	TE,AM,FOS,CF,C	0.42
tt36	soil	China-Fujian	TE,SXT,IPM,FOS,C	0.42
tt55	soil	China-Fujian	AM,FEP,SXT,FOS,C	0.42
tx1-49	shrimp	China-Fujian	AM,FEP,SXT,CF,C	0.42
tx2-36	shrimp	China-Fujian	AM,FEP,SXT,CF,C	0.42
tt7	soil	China-Fujian	SXT,IPM,MEM,FOS,C	0.42
tS18	pond water	China-Fujian	CTR,FEP,SXT,CF,C	0.42
tx1-23	shrimp	China-Fujian	CTR,FEP,SXT,CF,C	0.42

tx2-6	shrimp	China-Fujian	CTR,FEP,SXT,CF,C	0.42
tx2-15	shrimp	China-Fujian	CTR,FEP,SXT,CF,C	0.42
tx2-21	shrimp	China-Fujian	CTR,FEP,SXT,CF,C	0.42
SD-S20	pond water	China-Shandong	CTR,FEP,CF,FOS,C	0.42
GD-T-24	soil	China-Guangdong	AM,CTR,SXT,C	0.33
GD-T-33	soil	China-Guangdong	FEP,CTR,SXT,C	0.33
B-10-X-3	shrimp	China-Guangdong	FEP,CTR,SXT,C	0.33
GWCS14	pond water	China-Guangdong	FOS,AM,TE,C	0.33
GD-2-T	soil	China-Guangdong	FEP,CTR,SXT,C	0.33
GD-TS11	aquafeed	China-Guangdong	AM,FEP,CTR,C	0.33
GD-HY-33-T	soil	China-Guangdong	AM,GM,TE,C	0.33
GWCS47	pond water	China-Guangdong	FOS,FEP,TE,C	0.33
GWCS41	pond water	China-Guangdong	FEP,CTR,TE,C	0.33
GD-GWC10X-11	shrimp	China-Guangdong	AM,CTR,TE,C	0.33
B-5-X-11	shrimp	China-Guangdong	FOS,FEP,CTR,C	0.33
GWC9X-9	shrimp	China-Guangdong	FOS,CTR,TE,C	0.33
B-X-25-44	shrimp	China-Guangdong	IPM,MEM,AM,C	0.33
GD-HY-26-T	soil	China-Guangdong	FEP,CTR,SXT,C	0.33
GD-HY-54-T	soil	China-Guangdong	FEP,CTR,SXT,C	0.33
BS60	aquafeed	China-Fujian	FEP,SXT,CF,C	0.33
TS50	pond water	China-Fujian	FEP,CTR,CF,C	0.33

Ts20	pond water	China- Fujian	FEP,CTR,CF,C	0.33
TS53	pond water	China- Fujian	FOS,CTR,CF,C	0.33
TS31	pond water	China- Fujian	FOS,FEP,CF,C	0.33
TS37	pond water	China- Fujian	CTR,TE,AM,C	0.33
tt13	soil	China- Fujian	TE,AM,CF,C	0.33
tt3	soil	China- Fujian	TE,FOS,CF,C	0.33
tx1-45	shrimp	China- Fujian	CTR,AM,CF,C	0.33
JS-YHS25	aquafeed	China- Jiangsu	FEP,CF,FOS,C	0.33
0.5s29	aquafeed	China- Shandong	AM,TE,FOS,C	0.33
0.5s40	aquafeed	China- Shandong	AM,TE,FOS,C	0.33
0.5s45	aquafeed	China- Shandong	AM,TE,FOS,C	0.33
tu31	soil	China- Shandong	AM,TE,FOS,C	0.33
tu50	soil	China- Shandong	CTR,FEP,FOS,C	0.33
2x20	shrimp	China- Shandong	AM,TE,FOS,C	0.33
GD-HY-T-14	soil	China- Guangdong	FEP,CTR,C	0.25
GD-HY-T-19	soil	China- Guangdong	FEP,FOS,C	0.25
GWCS4	pond water	China- Guangdong	FOS,FEP,C	0.25
GD-SL-21	aquafeed	China- Guangdong	AM,FEP,C	0.25
GWCS26	pond water	China- Guangdong	MEM,FOS,C	0.25
GD-GWC5X-4	shrimp	China- Guangdong	CIP,AM,C	0.25
GWC10X-1	shrimp	China- Guangdong	FEP,CTR,C	0.25
GWCS12	pond water	China- Guangdong	FOS,TE,C	0.25

GWCS9	pond water	China- Guangdong	FOS,FEP,C	0.25
GD- GWCT11	soil	China- Guangdong	MEM,FEP,C	0.25
GWCT18	soil	China- Guangdong	FEP,TE,C	0.25
B-2-T-11	soil	China- Guangdong	FEP,MEM,C	0.25
GD-HY-53- T	soil	China- Guangdong	FEP,CTR,C	0.25
TS2	pond water	China- Fujian	CTR,CF,C	0.25
TS35	pond water	China- Fujian	CTR,CF,C	0.25
TS36	pond water	China- Fujian	FOS,CF,C	0.25
tS16	pond water	China- Fujian	CTR,TE,C	0.25
ts55	soil	China- Fujian	CTR,TE,C	0.25
tt17	soil	China- Fujian	CTR,FEP,C	0.25
tS48	pond water	China- Fujian	TE,FOS,C	0.25
tS10	pond water	China- Fujian	TE,FOS,C	0.25
ts25	aquafeed	China- Fujian	TE,CF,C	0.25
TS38	pond water	China- Fujian	AM,FOS,C	0.25
tt28	soil	China- Fujian	AM,FOS,C	0.25
HYS3-16	aquafeed	China- Guangdong	FEP,C	0.17
GD-HY-T- 16	soil	China- Guangdong	FEP,C	0.17
GD-HY-T- 40	soil	China- Guangdong	FEP,C	0.17
GD-SL-1-3	aquafeed	China- Guangdong	TE,C	0.17
GWC9X-8	shrimp	China- Guangdong	FOS,C	0.17
GWCS1	pond water	China- Guangdong	CTR,C	0.17

GWCS2	pond water	China- Guangdong	SXT,C	0.17
GWCT22	soil	China- Guangdong	FOS,C	0.17
GWCT17	soil	China- Guangdong	FOS,C	0.17
B-T-9	soil	China- Guangdong	TE,C	0.17
GD-HY-24- T	soil	China- Guangdong	FOS,C	0.17
GD-4-X-16	shrimp	China- Guangdong	FEP,C	0.17
GD-28-S	pond water	China- Guangdong	FEP,C	0.17
B-S-31	pond water	China- Guangdong	TE,C	0.17
GWCS39	pond water	China- Guangdong	CTR,C	0.17
GWCS43	pond water	China- Guangdong	FOS,C	0.17
GWCS5X-3	shrimp	China- Guangdong	FOS,C	0.17
B-10-X-5	shrimp	China- Guangdong	TE,C	0.17
B-9-X-6	shrimp	China- Guangdong	TE,C	0.17
GWCS5	pond water	China- Guangdong	CTR,C	0.17
B-T-1	soil	China- Guangdong	TE,C	0.17
B-SL-F-33	aquafeed	China- Guangdong	TE,C	0.17
B-SL-F-44	aquafeed	China- Guangdong	TE,C	0.17
tS21	pond water	China- Fujian	FOS,C	0.17
tS19	pond water	China- Fujian	TE,C	0.17
tS23	pond water	China- Fujian	TE,C	0.17
tt9	soil	China- Fujian	TE,C	0.17
tS54	pond water	China- Fujian	TE,C	0.17

tS44	pond water	China- Fujian	AM,C	0.17
ts32	aquafeed	China- Fujian	GM,C	0.17
ts33	aquafeed	China- Fujian	CTR,C	0.17
TWS11	aquafeed	China- Jiangsu	FOS,C	0.17
TWS19	aquafeed	China- Jiangsu	AM,C	0.17
0.5s35	aquafeed	China- Shandong	TE,C	0.17
1s2	aquafeed	China- Shandong	FOS,C	0.17
1s15	aquafeed	China- Shandong	FOS,C	0.17
shui11	pond water	China- Shandong	FOS,C	0.17
SD-S12	pond water	China- Shandong	CF,C	0.17
shui30	pond water	China- Shandong	FOS,C	0.17
SD-S36	pond water	China- Shandong	CTR,C	0.17
2x37	shrimp	China- Shandong	TE,C	0.17
2x48	shrimp	China- Shandong	TE,C	0.17
2x56	shrimp	China- Shandong	TE,C	0.17
B-SL-F-8	aquafeed	China- Guangdong	C	0.08
B-S-19	pond water	China- Guangdong	C	0.08
B-S-8	pond water	China- Guangdong	C	0.08
GWC2X-5	shrimp	China- Guangdong	C	0.08
GWCS18	pond water	China- Guangdong	C	0.08
GD-SL-42	aquafeed	China- Guangdong	C	0.08
B-SL-F-25	aquafeed	China- Guangdong	C	0.08

BS2	aquafeed	China-Fujian	C	0.08
tt45	soil	China-Fujian	C	0.08
YHS2	aquafeed	China-Jiangsu	C	0.08
YHS3	aquafeed	China-Jiangsu	C	0.08
YHS4	aquafeed	China-Jiangsu	C	0.08
YHS19	aquafeed	China-Jiangsu	C	0.08
TWS9	aquafeed	China-Jiangsu	C	0.08

Table S4. *B. licheniformis* genomes were recovered from the GenBank database

Name	Isolation source	Region	ST
GCF_001587315.1	Mushroom soup	Netherlands	3
GCF_015845325.1	unknown	USA	1
GCF_000008425.1	unknown	unknown	1
GCF_000011645.1	unknown	unknown	1
GCF_018332815.1	Honey	Japan	1
GCF_018332835.1	Honey	Japan	1
GCF_016026835.1	unknown	unknown	3
GCF_016126875.1	chicken	China:Chengdu	3
GCF_020686805.1	leaf	Tunisia:Bulla-Regia	3
GCF_020686825.1	leaf	Tunisia:Bulla-Regia	3
GCF_020686845.1	leaf	Tunisia:Bulla-Regia	3
GCF_021045125.1	goat	South Africa	3
GCF_002272455.1	uncut heroin sample	Germany	3
GCF_002272365.1	uncut heroin sample	Germany	3
GCF_003474315.1	feces	China: Shenzhen	3
GCF_001642595.1	soil	Czech Republic:Nerartovice	3
GCF_003253815.1	adult feces	South Korea: Bundang	3
GCF_003606405.1	Maotai Daqu	China	3
GCF_003952865.1	Korean adult feces	South Korea: Seoul	3
GCF_006974025.1	unknown	unknown	3
GCF_002966955.1	High-salt fermented soybean	South Korea: Suwon	3
GCF_004103575.1	food	South Korea	3
GCF_007831015.1	human feces	Netherlands	3
GCF_001925055.1	unknown	Netherlands	3
GCF_002271465.1	uncut heroin sample	Germany	3
GCF_007830775.1	cheese	Netherlands	3
GCF_007830795.1	seawater	Netherlands	3

GCF_007831035.1	human feces	Netherlands	3
GCF_007831215.1	air sampler	Netherlands	3
GCF_007831435.1	Pig faeces	Germany	1
GCF_007831465.1	Pig faeces	Germany	3
GCF_007831495.1	soil	Netherlands	3
GCF_007831515.1	Pig faeces Germany, Farm, Slaughterpigs; not receiving antibiotics or Bacillus based products	Germany	3
GCF_007831575.1	soil	Denmark: Vigerslev	3
GCF_007831655.1	soil	Denmark: Vigerslev	1
GCF_007831695.1	soil	Denmark: Vigerslev	3
GCF_007831705.1	soil	Denmark: Vigerslev	3
GCF_007831875.1	Pig faeces Germany, Farm, Slaughterpigs; not receiving antibiotics or Bacillus based products	Germany	3
GCF_007832095.1	swine faeces	Germany	3
GCF_007832135.1	swine faeces	Germany	1
GCF_007832235.1	aborted bovine fetus, lung	Netherlands	3
GCF_007832295.1	potato pulp for cattle feeding	Netherlands	3
GCF_007832395.1	aborted bovine, placenta	Netherlands	3
GCF_008368515.1	Gergoush (Sudanese Bread snack) primary fermentation step	Sudan	3
GCF_009662395.1	soil in grass field, non-agriculture site	Denmark:Dyrehave	3
GCF_009965255.1	soil	Canada	3
GCF_007832345.1	aborted bovine fetus, lung	Denmark	3
GCF_010578005.1	commercial probiotic used for environment	China	1
GCF_014673515.1	Crude salt from Camalti Saltern	Turkey: Izmir	1
GCF_020686785.1	plant leaf	Tunisia: Bulla-Regia	3
GCF_023713085.1	Cleanroom	USA	3
GCF_023713165.1	Cleanroom	USA	3
GCF_023714845.1	Cleanroom	USA	3
GCF_001587355.1	dairy environment	Netherlands	3
GCF_000315975.1	Chinese Maotai-flavor liquor making process	China: Jiangsu	3
GCF_002272395.1	uncut heroin sample	Germany	3
GCF_000258125.2	soil from Yingcheng Salt Mine	China: Hubei Province	3

GCF_001507755.1	unknown	Netherlands	4
GCF_016629635.1	mining drainage	Peru: Lima	3
GCF_016902155.1	Gallusgallus' caecum	unknown	1
GCF_007832035.1	unknown	unknown	1
GCF_007994365.1	unknown	unknown	1
GCF_006094335.1	unknown	unknown	1
GCF_006494795.1	silt	China: Qinghai Province	3
GCF_900110715.1	unknown	unknown	3
GCF_007994305.1	swine faeces	Germany	3
GCF_007994355.1	unknown	Netherlands	1
GCF_008368415.1	Gergoush (Sudanese Bread snack) primary fermentation step	Sudan	3
GCF_008368425.1	Gergoush (Sudanese Bread snack) primary fermentation step	Sudan	3
GCF_902386215.1	Human gut	unknown	3
GCF_021045185.1	horse	South Africa	3
GCF_022630555.1	biocompost	Germany	3
GCF_022700915.1	unknown	China:Beijing	1

Table S5. Antibiotic resistance genes, pathogenicity score, virulence factors and mobile genetic elements of *Bacillus licheniformis*

Isolate	Resistance gene	Pathogenicity Score (no. of pathogenic family)	Virulence factors	Mobile genetic elements
FJ-ts47	ErmD, BcIII, qacJ, bcrA/B/C	0.79 (59)	fliP, clpE, invA, cesA, ureB, mxiA, flhA	IS1182, IS3(IS150), IS1595(ISPna2), ISL3, IS5, ISNCY(ISDol1)
FJ-ts50	qacJ, ErmD, BcIII	0.808(266)	dhbF, clpP, lap, entB, lepA	IS1182, IS1595(ISPna2), IS3(IS150), IS1595(ISNha5)
FJ-ts53	qacJ, ErmD, BcIII	0.808(266)	dhbF, clpP, lap, entB, lepA	IS1182, IS1595(ISPna2), IS3(IS150), IS1595(ISNha5), ISAs1
FJ-ts58	qacJ, ErmD, BcIII, bcrA/B/C	0.79 (59)	fliP, clpE, invA, cesA, ureB, mxiA, flhA	IS1182, IS1595(ISPna2), IS3(IS150), IS3(IS3), ISL3, IS5(IS5)
GD-GWCS28	ErmD, BcIII, qacJ, bcrA/B/C	0.81(62)	dhbF, clpP, lap, capB, pvdI, Cj1440c, icl, dhbE	IS1182, IS3(IS150), IS1595(ISPna2), IS1595(IS1595)ISL3, IS110
GD-GWC10X-1	ErmD, BcIII, qacJ	0.803(246)	fliP, invA, cpsA, flhB	IS1182, IS3(IS150), IS1595(ISPna2), IS3(IS3), IS630, IS256, ISAs1, ISNCY, IS110, IS4
GD-GWCT1	qacJ, ErmD, BcIII, bcrB/C	0.81(62)	dhbF, capB, pvdI, dhbE, pchD	IS1182, IS1595(ISPna2), IS3(IS150), ISL3, IS110, IS66, IS5(ISL2), IS1595(IS1595) , Tn3
GD-TS11	qacJ, BcIII	0.807(230)	fliP, invA, cpsA, flhB, narH	IS1182, IS1595(ISPna2), IS3(IS150)
GD-GWC5X-4	qacJ, ErmD, BcIII	0.808(269)	fliP, clpE, invA, cpsA, flhB, lplA1	IS1182, IS1595(ISPna2) , IS3(IS150), IS1595(ISNha5), ISAs1
GD-GWCT10	qacJ, ErmD, BcIII, bcrA/B/C	0.81 (62)	dhbF, clpP, lap, capB, pvdI, Cj1440c, icl, dhbE	IS1182, IS1595(ISPna2), IS3(IS150), ISL3, IS1182, IS110, IS1595, Tn3
JS-TWS15	qacJ, ErmD, BcIII	0.808(227)	clpE, lplA1	IS1182, IS1595(ISPna2), IS3(IS150)
JS-YHS25	ErmD, BcIII, qacJ	0.808(266)	dhbF, clpP, lap, entB, lepA	IS1182, IS3(IS150), IS1595(ISPna2), IS1595(ISNha5) , ISAs1
JS-YHS52	qacJ, ErmD, BcIII	0.808(265)	dhbF, clpP, lap, entB, lepA	IS1182, IS1595(ISPna2), IS3(IS150), IS1595(ISNha5), ISAs1
JS-YHS57	qacJ, ErmD, BcIII	0.808(267)	dhbF, clpP, lap, entB, lepA	IS1182, IS1595(ISPna2), IS3(IS150), IS1595(ISNha5), ISAs1
SD-S12	qacJ, ErmD, BcIII	0.808(266)	dhbF, clpP, lap, entB, lepA	IS1182, IS1595(ISPna2), IS3(IS150), IS1595(ISNha5), ISAs1
SD-S20	ErmD, BcIII, qacJ	0.808(266)	dhbF, clpP, lap, entB, lepA	IS1182, IS3(IS150), IS1595(ISPna2), IS1595(IS1595), ISL3, IS110
SD-S36	qacJ, ErmD, BcIII	0.808(266)	dhbF, clpP, lap, entB, lepA	IS1182, IS1595(ISPna2), IS3(IS150), IS1595(ISNha5)