

Accumulation of Heavy Metals and Antibiotic Resistance Genes in Sediments from *Eriocheir sinensis* Ponds and Their Correlation with Bacterial Communities

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Table S1. Primer sequences of antibiotic resistance genes.

Classification	Gene	Upstream sequence (5'→3')	Annealing temperature(°C)
		Downstream sequence (5'→3')	
aminoglycoside	<i>aadA</i>	GTTGTGCACGACGACATCATT	60
		GGCTCGAAGATACCTGCAAGAA	
	<i>strA</i>	TCAATCCCCGACTTCTTACCG	60
		CACCATGGCAAACAACCATA	
Sulfonamides	<i>strB</i>	GGGACTCCTGCAATCGTCAA	60
		CTCGGCAACGATGTGAGAGA	
	<i>sul1</i>	CACCGGAAACATCGCTGCA	60
		AAGTTCCGCCGCAAGGCT	
Tetracyclines	<i>sul2</i>	GCGCTCAAGGCAGATGGCATT	60
		GCGTTTGATACCGGCACCCG	
	<i>tetM</i>	CCGTTGGGAAGTGAATGC	60
		TCCGAAAATCTGCTGGGGTA	
Integron	<i>intl1</i>	CCTCCCGCACGATGATC	60
		TCCACGCATCGTCAGGC	
β-lactams	<i>blaTEM</i>	AGATCAGTTGGGTGCACGAG	60
		CCGCACCACATAGCAGAACT	
16S	<i>16S rRNA</i>	CCTACGGGAGGCAGCAG	60
		ATTACCGCGGCTGCTGG	

Table S2. The heavy metal content in the sediment of water supply canal and drainage canals of *E. sinensis* ponds.

mg/kg	GAA	GAB	GAC	GBA	GBB	GBC	GCA	GCB	GCC
Cr	20.22	31.22	14.54	27.83	22.93	52.91	32.30	18.26	10.24
Mn	243.99	414.35	250.53	390.56	331.25	1087.39	413.50	153.57	166.19
Co	6.26	10.25	4.46	9.20	7.75	18.29	8.61	4.31	3.33
Ni	15.97	24.88	11.43	22.52	18.36	42.05	21.64	9.19	8.33
Cu	17.03	36.23	16.03	22.30	19.07	37.85	22.90	12.37	9.77
Zn	101.28	158.30	105.41	175.86	108.29	152.33	448.57	60.28	65.37
As	5.29	8.48	4.58	7.46	5.26	11.49	8.66	4.02	2.45
Rb	19.67	28.38	11.38	26.62	20.95	47.22	28.35	10.64	8.92
Cd	0.38	0.66	0.57	1.24	0.86	1.21	0.43	0.27	0.39
Pb	18.02	22.94	12.69	27.59	15.14	51.38	28.67	9.03	12.12

Table S3 The heavy metal enrichment fraction (EF) in the sediment of water supply canal and drainage canals of *E. sinensis* ponds.

	GAA	GAB	GAC	GBA	GBB	GBC	GCA	GCB	GCC
Cr	0.73	0.67	0.51	0.63	0.61	0.43	0.69	1.05	0.55
Co	1.09	1.05	0.76	1.00	1.00	0.72	0.89	1.19	0.85
Ni	1.31	1.20	0.91	1.15	1.11	0.77	1.05	1.20	1.00
Cu	1.66	2.08	1.52	1.36	1.37	0.83	1.32	1.92	1.40
Zn	3.03	2.79	3.07	3.29	2.39	1.02	7.92	2.87	2.87
As	1.05	0.99	0.88	0.92	0.77	0.51	1.01	1.26	0.71
Rb	0.39	0.33	0.22	0.33	0.31	0.21	0.33	0.33	0.26
Cd	8.65	8.85	12.64	17.64	14.42	6.18	5.78	9.77	13.04
Pb	1.51	1.13	1.03	1.44	0.93	0.96	1.41	1.20	1.49

Table S4 The total potential ecological risk index (RI) in the sediment of water

supply canal and drainage canals of *E. sinensis* ponds.

Location	E_r^i								RI	Risk level
	Cr	Ni	Cu	Zn	As	Cd	Pb	Co		
GAA	9.94	2.97	3.77	1.36	4.72	117.53	3.39	2.46	146.15	low
GAB	15.35	4.62	8.02	2.13	7.57	204.12	4.31	4.04	250.17	moderate
GAC	7.15	2.12	3.55	1.42	4.09	176.29	2.39	1.76	198.76	moderate
GBA	13.69	4.19	4.93	2.37	6.66	383.51	5.19	3.62	424.15	significant
GBB	11.28	3.41	4.22	1.46	4.70	265.98	2.85	3.05	296.94	moderate
GBC	26.02	7.82	8.37	2.05	10.26	374.23	9.66	7.20	445.61	significant
GCA	15.89	4.02	5.07	6.05	7.73	132.99	5.39	3.39	180.52	moderate
GCB	8.98	1.71	2.74	0.81	3.59	83.51	1.70	1.70	104.73	low
GCC	5.04	1.55	2.16	0.88	2.19	120.62	2.28	1.31	136.02	low
Average	12.59	3.60	4.76	2.06	5.72	206.53	4.13	3.17	242.56	

Table S5 Absolute abundance of antibiotic resistance genes (copies/g) in the sediment of water supply canal and drainage canals of *E. sinensis* ponds.

Sample	<i>sul1</i>	<i>sul2</i>	<i>aadA</i>	<i>strA</i>	<i>strB</i>	<i>blaTEM</i>	<i>tetM</i>	<i>Int11</i>
GAA	53215.31	1295.81	3248.85	230.61	324.05	1324580.75	102.84	12908.99
GAB	280456.02	4483.77	10772.23	246.66	204.18	4479955.54	84.08	84809.76
GAC	239066.56	5148.24	24624.03	518.14	578.24	1242298.77	178.54	63961.08
GBA	223408.32	16783.92	6581.33	99.59	551.00	27103.81	103.34	44607.38
GBB	471807.06	15888.91	23153.16	492.36	870.47	111627.77	272.29	93025.66
GBC	4457.31	1076.04	494.12	50.47	385.89	123463.99	25.78	1474.85
GCA	643063.01	9251.38	19476.34	468.96	369.40	20170.21	168.95	72181.96
GCB	46248.34	5310.20	1893.05	38.75	80.14	19940.54	90.13	14193.15
GCC	3679640.66	44579.94	190203.85	3313.84	2990.07	34710.51	710.64	721494.48

Table S6 Alpha diversity of bacteria in the sediment of water supply canal and drainage canals of *E. sinensis* ponds.

Sample	ACE	Chao1	Shannon	Simpson
GAA	4545.23±551.88	4531.98±547.13	11.07±0.17	1±0
GAB	3705.09±249.71	3692.21±250.13	10.35±0.1	1±0
GAC	4201.43±402.09	4192.21±395.53	10.91±0.09	1±0
GBA	3738.85±413.61	3726.64±414.44	10.6±0.16	1±0
GBB	4088.44±819.84	4080.8±822.9	10.58±0.32	1±0
GBC	3853.02±336.29	3839.95±333.3	10.83±0.2	1±0
GCA	4679.25±411.69	4668.35±414.9	11.15±0.22	1±0
GCB	4014.52±468.14	4003.38±464.35	10.72±0.13	1±0
GCC	3406.76±280.31	3393.94±283.87	10.18±0.24	1±0