

Supplementary material

Table S1 Range of water quality-related indicators

Group	Temperature (°C)	pH	Salinity (ppt)	Ammonia-N concentration (mg/L)
Experimental	28–30	7.8–8.3	30–31	7.6–8.2
Control	28–30	7.9–8.2	30–31	0–0.25

Table S2 Survival time of the shrimp

Time or item	Treated groups (time)			Control groups (time)		
	T1	T2	T3	C1	C2	C3
2 nd day	1 (11:00 am)	/	/	/	/	/
3 rd day	/	1 (7:00 am)	/	/	/	/
5 th day	/	/	1 (16:00 pm) 1 (23:00 pm)	/	1 (16:00 pm)	1 (16:00 pm)
6 th day	2 (7:00 am)	/	1 (16:00 pm)	1 (7:00 am)	/	/
7 th day	/	1 (16:00 pm)	/	/	/	/
8 th day	/	1 (11:00 am)	/	/	/	/
9 th day	/	/	/	/	/	/
10 th day	/	/	/	1 (23:00 pm)	/	/
11 th day	/	/	/	/	/	/
12 th day	/	/	/	/	1 (23:00 pm)	/
14 th day	/	/	/	/	/	1 (7:00 am)
15 th day	/	1 (23:00 pm)	2 (7:00 am)	/	/	/
17 th day	1 (11:00 am)	/	/	1 (7:00 am)	/	/
19 th day	1 (16:00 pm)	/	/	/	1 (16:00 pm)	/
20 th day	/	/	1 (23:00 pm)	/	1 (16:00 pm)	/
21 th day	/	1 (11:00 am)	/	/	/	/
22 th day	/	/	/	1 (11:00 am)	1 (7:00 am)	/
23 th day	/	1 (16:00 pm)	1 (16:00 pm)	/	/	/
26 th day	/	/	/	/	/	2 (11:00 am)
Cumulative number	5	6	7	4	5	4

Table S3 Primer sequences used in this study

Gene	Gene ID	Primer name	Primer sequence (5'-3')	Purpose
<i>β-actin</i>	LOC113813020	<i>β-actin</i> -F	5'-CCCTCGCTCCCTCCACCATG	Reference
		<i>β-actin</i> -R	5'-CTCCTGCTTGCTGATCCACATCTG	gene
<i>dnajc5</i>	LOC113802295	<i>dnajc5</i> -F	5'-GGAAGCGACTACGGCAAGA	
		<i>dnajc5</i> -R	5'-TAAGCCACCCAGGCAGAATA	
<i>lpla2</i>	LOC113805268	<i>lpla2</i> -F	5'-TGTTGAGACGCCCACGAA	
		<i>lpla2</i> -R	5'-TTGCCAGCAGCATAGACCA	
<i>slc6a8</i>	LOC113816986	<i>slc6a8</i> -F	5'-TTGACTTGTTCCCCGACTACC	
		<i>slc6a8</i> -R	5'-GGATGATACCGCTGGCTGA	
<i>titin</i>	LOC113819544	<i>titin</i> -F	5'-ACCGTAACCTTGAAATGCTGAT	
		<i>titin</i> -R	5'-TTCTTGCCACCTCCTCTGC	qPCR
<i>ferritin</i>	LOC113830150	<i>ferritin</i> -F	5'-TTTGCCCAGGACACCGTAG	
		<i>ferritin</i> -R	5'-GACACCTCGCTTGTTGAGATAGT	
<i>naa38</i>	LOC113808996	<i>naa38</i> -F	5'-CTCGTGGTCTGCCTGGTCTT	
		<i>naa38</i> -R	5'-AGGTCTGAGCGGTGGTCTTC	
<i>sec61b</i>	LOC113809401	<i>sec61b</i> -F	5'-GCAAGACCACCACCTCTACCT	
		<i>sec61b</i> -R	5'-CAACTCCACAGCGTCACTCG	
<i>pck2</i>	LOC113826096	<i>pck2</i> -F	5'-TCAGGCTATGGCGGAAACT	
		<i>pck2</i> -R	5'-GGGAAGGCAGCAGCAATGTA	

Table S4 Assembly statistic of *L. vannamei* transcriptome

Groups	Total raw reads	Total clean reads	Clean bases	GC Percentage	Q20%	Q30%
Hepatopancreas in treated vs. control groups						
Experimental-1	42472940	41962000	6.29G	48.49	97.11	92.29
Experimental-2	50645028	49716510	7.46G	49.09	97.96	94.02
Experimental-3	46534620	45145328	6.77G	49.06	97.88	93.85
Control-1	43280490	42364064	6.35G	48.60	97.95	94.01
Control-2	49168174	47505864	7.13G	47.32	97.37	92.84
Control-3	40328882	39518692	5.93G	49.22	97.58	93.35
Gill in treated vs. control groups						
Experimental-1	42601400	41498544	6.22G	42.79	97.91	93.91
Experimental-2	47370314	46295474	6.94G	44.50	97.49	92.86
Experimental-3	40609918	39577796	5.94G	43.90	97.77	93.72
Control-1	40138518	37237092	5.59G	41.10	95.08	88.89
Control-2	49709960	48913838	7.34G	43.78	97.21	92.55
Control-3	46721526	45406294	6.81G	39.16	95.47	89.52

Table S5 Compare statistics with reference genome

Groups	Effective reads	Total mapped	Exon	Intron	Intergenic
Hepatopancreas in treated vs. control groups					
Experimental-1	41962000	37594435 (89.59%)	5207381562 (92.76%)	110603290 (1.97%)	295936998 (5.27%)
Experimental-2	49716510	44692149 (89.89%)	6151948441 (92.17%)	152510703 (2.29%)	369790528 (5.54%)
Experimental-3	45145328	40525038 (89.77%)	5559714483 (91.87%)	150740605 (2.49%)	341082494 (5.64%)
Control-1	42364064	38101540 (89.94%)	5217829921 (91.69%)	126047855 (2.21%)	346993398 (6.10%)
Control-2	47505864	41985312 (88.38%)	5633428419 (89.88%)	102937280 (1.64%)	531312967 (8.48%)
Control-3	39518692	33903074 (85.79%)	4604517224 (91.02%)	98385461 (1.94%)	355838687 (7.03%)
Gill in treated vs. control groups					
Experimental-1	41498544	37318272 (89.93%)	4822262831 (86.54%)	144763576 (2.60%)	605114407 (10.85%)
Experimental-2	46295474	42181381 (91.11%)	5587102513 (88.68%)	185118931 (2.94%)	528253883 (8.38%)
Experimental-3	39577796	35363980 (89.35%)	4540594922 (86.00%)	168238449 (3.19%)	570899306 (10.81%)
Control-1	37237092	27725198 (74.46%)	3092863223 (74.94%)	124681921 (3.02%)	909588327 (22.04%)
Control-2	48913838	42769779 (87.44%)	5245687342 (82.19%)	215967293 (3.38%)	920506174 (14.42%)
Control-3	45406294	34032831 (74.95%)	3750937527 (74.01%)	157132678 (3.10%)	1160072907 (22.89%)