Supplemental Materials

Immediate Impact of Hurricane Lane on Microbiological Quality of Coastal Water in Hilo Bay, Hawaii

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Table S1. qPCR assays targeting total bacteria and pathogens used in the study

Target bacterial species	Gene marker (target size)	Forward (F), reverse (R), and probe (P) sequences (5' - 3')	Conc. (µM)	Cycling condition	Ref.
Total bacteria	16S rRNA (142 bp)	F: CGGTGAATACGTTCYCGG	0.2	95.0 °C for 2 min and followed with 40 cycles of 95.0 °C for 15 s, 60.0 °C for 30 s. and 72.0 °C for 30	[1]
		R: GGWTACCTTGTTACGACTT	0.2		
		P: FAM/CTTGTACAC/ZEN/ACCGCCCGTC/3IABkFQ	0.1		
Enteropathogenic *E. coli* (EPEC)	*eaeA* (102 bp)	F: CATTGATCAGGATTTTTCTGGTGATA	0.2	95.0 °C for 2 min and followed with 45 cycles of 95.0 °C for 15 s and 60.0 °C for 30 s.	[2]
		R: CTCATGCGGAAATAGCCGTTA	0.2		
		P: FAM/ATAGTCTCGCCAGTATTCGCCACCAATACC/TAMSp	0.05		
Salmonalla spp.	*invA* (116 bp)	F: AGCGTACTGGAAAGGGAAAG	0.2		[3]
		R: ATACCGCCAATAAAGTTCACAAAG	0.2		
		Probe: FAM/CGTCACCTTTGATAAACTTCATCGCA/BHQ1	0.05		
Campylobacter jejuni	*hipO* (124 bp)	F: TGCACCAGTGACTATGAATAACGA	0.2		[4, 5]
		R: TCCAAAATCCTCACTTGCCATT	0.2		
		P: FAM/TGCAACCTC/ZEN/ACTAGCAAAATCCACAGCT/IABkFQ	0.05		
L. pneumophila	*mip* (115 bp)	F: TTGTCTTATAGCATTGGTGCCG	0.2		[6]
		R: CCAATTGAGCGCCACTCATAG	0.2		
		P: FAM/CGGAAGCAA/ZEN/TGGCTAAAGGCATGCA/IABkFQ	0.05		

Table S2. qPCR assays targeting ARGs and class 1 integrase used in the study

Gene marker (target size)	Class of antibiotics or Integron	Forward (F), reverse (R), and probe (P) sequences (5' - 3')*	Conc. (µM)	Cycling condition	Ref.
ermB (91 bp)	macrolide	F: GGATTCTACAAGCGTACCTTGGA	0.2	95.0 °C for 2 min and followed with 40 cycles of 95.0 °C for 15 s, 60.0 °C (69.9 °C *sulI*) for 30 s. and 72.0 °C for 30 s	[7]
		R: GCTGGCAGCTTAAGCAATTGCT	0.2		
		P: FAM/CACTAGGGT/ZEN/TGCTCTTGCACACTCAAGTC/IABkFQ	0.1		
qnrS (118 bp)	quinolone	F: CGACGTGCTAACTTGCGTGA	0.2		[8]
		R: GGCATTGTTGGAAACTTGCA	0.2		
		P: FAM/AGTTCATTG/ZEN/AACAGGGTGA/IABkFQ	0.1		
tetO (171 bp)	tetracycline	F:ACGGARAGTTTATTGTATACC	0.2		[9]
		R: TGGCGTATCTATAATGTTGAC	0.2		
		P: FAM/CGTAGATGA/ZEN/AGGCACAACAAGGAC/IABkFQ	0.1		
tetM (88 bp)		F: GGTTTCTCTTGGATACTTAAATCAATCR	0.2		[10]
		R: CCAACCATAYAATCCTTGTTCRC	0.2		
		P: FAM/ATGCAGTTA/ZEN/TGGARGGGATACGCTATGGY/IABkFQ	0.1		
vanA (65 bp)	vancomycin	F: CTGTGAGGTCGGTTGTGCG	0.2		[11]
		R: TTTGGTCCACCTCGCCA	0.2		
		P: FAM/CAACTAACG/ZEN/CGGCACTGTTTCCCAAT/IABkFQ	0.1		
bla_{TEM} (85 bp)	ß-lactam	F: CACTATTCTCAGAATGACTTGGT	0.1		[12]
		R: TGCATAATTCTCTTACTGTCATG	0.1		
		P: FAM/CCAGTCACA/ZEN/GAAAAGCATCTTACGG/IABkFQ	0.05		
sulI (163 bp)	sulfonamide	F: CGCACCGGAAACATCGCTGCAC	0.2		[13]
		R: TGAAGTTCCGCCGCAAGGCTCG	0.2		
		P: FAM/TTCTTGGGC/ZEN/GCCACCGTTGGCCTT/IABkFQ	0.1		
*intI*1 (60 bp)	integrase	F: GCCTTGATGTTACCCGAGAG	0.2		[14]
		R: GATCGGTCGAATGCGTGT	0.2		
		P: FAM/ATTCCTGGC/ZEN/CGTGGTTCTGGGTTTT/IABkFQ	0.1		

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