

## Supplementary Material

Table S1. Specificity analysis of LAMP for BCC.

	No	Strain name	Primers		
			RibB 5	RibB 16	RibB 67
Non- <i>Burkholderia</i>	1	<i>Enterococcus faecalis</i> ATCC 29212	-	-	-
	2	<i>Enterococcus durans</i> ATCC 6056	-	-	-
	3	<i>Proteus mirabilis</i> ATCC 7002	-	-	-
	4	<i>Enterococcus faecium</i> ATCC 35667	-	-	-
	5	<i>Bacillus subtilis</i> ATCC 6051	-	-	-
	6	<i>Citrobacter freundii</i> ATCC 8090	-	-	-
	7	<i>Pseudomonas aeruginosa</i> PAO1	-	-	-
	8	<i>Enterococcus faecium</i> ATCC 49624	-	+	-
	9	<i>Yersinia enterocolitica</i> subsp. enterocolitica ATCC 27729	-	-	-
	10	<i>Shigella sonnei</i> ATCC 9290	-	-	-
	11	<i>Lactobacillus salivarius</i> subsp. salivarius ATCC 11741	-	+	-
	12	<i>Enterobacter aerogenes</i> ATCC 13048	-	-	-
	13	<i>Klebsiella pneumoniae</i> ATCC 13883	-	-	-
	14	<i>Pseudomonas aeruginosa</i> ATCC 27853	-	+	-
	15	<i>Candida albicans</i> (Robin) Berkhout ATCC 10231	-	-	-
	16	<i>Salmonella enterica</i>	-	+	-
	17	<i>Paenibacillus lautus</i>	-	+	-
	18	<i>Brevibacillus laterosporus</i>	-	+	-
BCC	19	<i>Burkholderia cepacia</i> PC783	+	+	+
	20	<i>Burkholderia cepacia</i> AU24442	+	+	+
	21	<i>Burkholderia stabilis</i> AU23340	+	+	+
	22	<i>Burkholderia pyrrocinia</i> AU11057	+	+	+
	23	<i>Burkholderia ambifaria</i> HI2468	+	+	+
	24	<i>Burkholderia anthina</i> HI2738	+	+	+
	25	<i>Burkholderia metallica</i> AU0553	+	+	+
	26	<i>Burkholderia metallica</i> AU16697	+	+	+
	27	<i>Burkholderia contaminans</i> HI3429	+	+	+
	28	<i>Burkholderia contaminans</i> AU24637	+	+	+
	29	<i>Burkholderia diffusa</i> AU1075	+	+	+
	30	<i>Burkholderia arboris</i> ES0263a	+	+	+
	31	<i>Burkholderia arboris</i> AU22095	+	+	+
	32	<i>Burkholderia lata</i> HI4002	+	+	+
	33	<i>Burkholderia cenocepacia</i> AU1054	+	+	+
	34	<i>Burkholderia cenocepacia</i> AU0222	+	+	+
	35	<i>Burkholderia cenocepacia</i> AU19236	+	+	+
	36	<i>Burkholderia cenocepacia</i> HI2976	+	+	+
	37	<i>Burkholderia cenocepacia</i> HI2485	+	+	+
	38	<i>Burkholderia cenocepacia</i> J2315	+	+	+
Non-BCC	39	<i>Burkholderia concitans</i> AU12121	-	-	+
	40	<i>Burkholderia fungorum</i> AU18377	-	+	+-
	41	<i>Burkholderia fungorum</i> AU35949	-	+	-
	42	<i>Burkholderia gladioli</i> AU16341	-	-	-
	43	<i>Burkholderia gladioli</i> AU26454	-	-	+-
	44	<i>Burkholderia gladioli</i> AU29541	-	-	-
	45	<i>Burkholderia gladioli</i> AU30473	-	-	+-
	46	<i>Burkholderia glumae</i> AU6208	-	-	-
	47	<i>Burkholderia glumae</i> AU12450	-	+	-
	48	<i>Burkholderia oklahomensis</i> ES0634	-	-	-
	49	<i>Burkholderia plantarii</i> AU9801	-	-	-
	50	<i>Burkholderia plantarii</i> AU37486	-	+	-
	51	<i>Burkholderia thailandensis</i> AU13555	-	+	-
	52	<i>Burkholderia thailandensis</i> AU36262	-	+	-
	53	<i>Burkholderia tropica</i> AU15822	-	-	-
	54	<i>Burkholderia tropica</i> AU19944	-	+	+
	55	<i>Caballeronia zhejiangensis</i> AU10475	-	-	-
	56	<i>Caballeronia zhejiangensis</i> AU12096	-	-	+

Table S3. Comparison of positive results for *B. cepacia* complex using LAMP and qPCR in nuclease-free water.

	Inoculum (CFU/ml)							
	10		10 <sup>2</sup>		10 <sup>3</sup>		10 <sup>4</sup>	
	LAMP	qPCR	LAMP	qPCR	LAMP	qPCR	LAMP	qPCR
1 <i>Burkholderia cepacia</i> PC783	2/6 <sup>a</sup>	0/6	2/6	1/6	2/6	2/6	0/6	3/6
2 <i>Burkholderia cepacia</i> AU24442	5/6	1/6	0/6	2/6	2/6	3/6	3/6	3/6
3 <i>Burkholderia stabilis</i> AU23340	2/6	3/6	1/6	3/6	2/6	4/6	2/6	6/6
4 <i>Burkholderia pyrrocinia</i> AU11057	1/6	1/6	1/6	1/6	1/6	4/6	1/6	6/6
5 <i>Burkholderia ambifaria</i> HI2468	2/6	0/6	1/6	4/6	3/6	6/6	3/6	6/6
6 <i>Burkholderia anthina</i> HI2738	2/6	2/6	3/6	2/6	2/6	3/6	2/6	6/6
7 <i>Burkholderia metallica</i> AU0553	6/6	4/6	6/6	6/6	5/6	6/6	6/6	6/6
8 <i>Burkholderia metallica</i> AU16697	5/6	5/6	6/6	6/6	3/6	4/6	6/6	6/6
9 <i>Burkholderia contaminans</i> HI3429	6/6	0/6	5/6	4/6	5/6	3/6	6/6	5/6
10 <i>Burkholderia contaminans</i> AU24637	5/6	0/6	6/6	1/6	6/6	6/6	6/6	6/6
11 <i>Burkholderia diffusa</i> AU1075	6/6	1/6	4/6	3/6	5/6	5/6	6/6	6/6
12 <i>Burkholderia arboris</i> ES0263a	6/6	0/6	3/6	0/6	5/6	0/6	6/6	6/6
13 <i>Burkholderia arboris</i> AU22095	3/6	1/6	3/6	1/6	4/6	5/6	6/6	5/6
14 <i>Burkholderia lata</i> HI4002	2/6	1/6	5/6	2/6	5/6	5/6	4/6	6/6
15 <i>Burkholderia cenocepacia</i> AU1054	4/6	2/6	3/6	3/6	3/6	4/6	6/6	6/6
16 <i>Burkholderia cenocepacia</i> AU0222	3/6	3/6	3/6	3/6	5/6	3/6	4/6	6/6
17 <i>Burkholderia cenocepacia</i> AU19236	2/6	0/6	2/6	2/6	4/6	0/6	5/6	0/6
18 <i>Burkholderia cenocepacia</i> HI2976	3/6	0/6	3/6	2/6	4/6	4/6	4/6	2/6
19 <i>Burkholderia cenocepacia</i> HI2485	2/6	0/6	2/6	2/6	5/6	3/6	4/6	1/6
20 <i>Burkholderia cenocepacia</i> J2315	3/6	1/6	3/6	4/6	4/6	2/6	4/6	6/6
<b>Total</b>	<b>70/120*</b> <b>(58.3%)</b>	<b>25/120</b> <b>(20.8%)</b>	<b>62/120</b> <b>(51.7%)</b>	<b>52/120</b> <b>(43.3%)</b>	<b>75/120</b> <b>(62.5%)</b>	<b>72/120</b> <b>(60.0%)</b>	<b>84/120</b> <b>(70.0%)</b>	<b>97/120</b> <b>(80.8%)</b>

<sup>a</sup>Number of positive/number of tests

\*There is a statistically significant difference between the qPCR and LAMP methods ( $p < 0.05$ ).

Table S4. Comparison of positive results for *B. cepacia* complex using LAMP and qPCR in CHX.

	Inoculum (CFU/ml)							
	10		10 <sup>2</sup>		10 <sup>3</sup>		10 <sup>4</sup>	
	LAMP	qPCR	LAMP	qPCR	LAMP	qPCR	LAMP	qPCR
1 <i>Burkholderia cepacia</i> PC783	0/6 <sup>a</sup>	0/6	1/6	0/6	5/6	0/6	5/6	5/6
2 <i>Burkholderia cepacia</i> AU24442	2/6	0/6	0/6	0/6	2/6	0/6	4/6	3/6
3 <i>Burkholderia stabilis</i> AU23340	1/6	0/6	1/6	2/6	0/6	2/6	1/6	5/6
4 <i>Burkholderia pyrrocinia</i> AU11057	0/6	0/6	0/6	2/6	0/6	3/6	3/6	4/6
5 <i>Burkholderia ambifaria</i> HI2468	1/6	0/6	0/6	0/6	0/6	3/6	0/6	5/6
6 <i>Burkholderia anthina</i> HI2738	1/6	0/6	2/6	0/6	0/6	3/6	1/6	3/6
7 <i>Burkholderia metallica</i> AU0553	0/6	0/6	2/6	0/6	3/6	3/6	4/6	5/6
8 <i>Burkholderia metallica</i> AU16697	5/6	0/6	5/6	0/6	4/6	0/6	4/6	5/6
9 <i>Burkholderia contaminans</i> HI3429	0/6	0/6	1/6	0/6	4/6	0/6	4/6	6/6
10 <i>Burkholderia contaminans</i> AU24637	1/6	0/6	2/6	0/6	4/6	1/6	5/6	6/6
11 <i>Burkholderia diffusa</i> AU1075	2/6	1/6	2/6	0/6	3/6	0/6	2/6	1/6
12 <i>Burkholderia arboris</i> ES0263a	3/6	0/6	1/6	0/6	2/6	0/6	2/6	2/6
13 <i>Burkholderia arboris</i> AU22095	1/6	0/6	1/6	0/6	4/6	1/6	0/6	6/6
14 <i>Burkholderia lata</i> HI4002	2/6	0/6	2/6	0/6	2/6	0/6	1/6	5/6
15 <i>Burkholderia cenocepacia</i> AU1054	5/6	0/6	1/6	0/6	4/6	0/6	2/6	4/6
16 <i>Burkholderia cenocepacia</i> AU0222	2/6	0/6	4/6	0/6	2/6	0/6	4/6	6/6
17 <i>Burkholderia cenocepacia</i> AU19236	0/6	0/6	0/6	0/6	0/6	0/6	2/6	5/6
18 <i>Burkholderia cenocepacia</i> HI2976	0/6	0/6	0/6	0/6	0/6	1/6	0/6	6/6
19 <i>Burkholderia cenocepacia</i> HI2485	1/6	0/6	0/6	0/6	0/6	0/6	1/6	6/6
20 <i>Burkholderia cenocepacia</i> J2315	2/6	0/6	1/6	0/6	0/6	2/6	4/6	2/6
<b>Total</b>	<b>29/120*</b> <b>(24.2%)</b>	<b>1/120</b> <b>(0.83%)</b>	<b>26/120*</b> <b>(21.7%)</b>	<b>4/120</b> <b>(3.3%)</b>	<b>39/120*</b> <b>(32.5%)</b>	<b>19/120</b> <b>(15.8%)</b>	<b>49/120*</b> <b>(40.8%)</b>	<b>90/120</b> <b>(75.0%)</b>

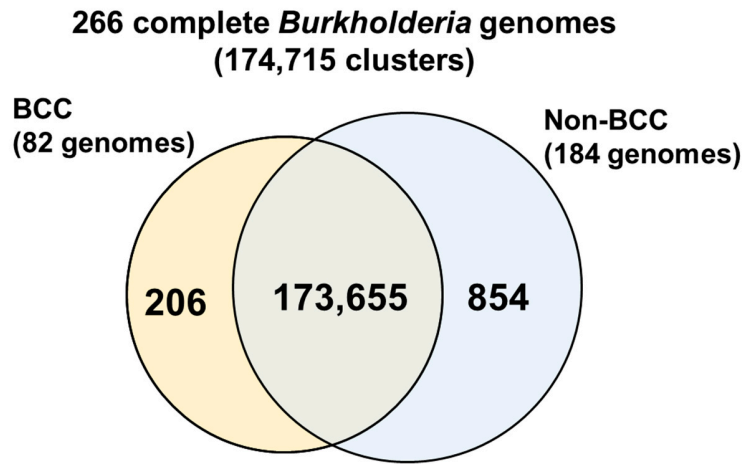
<sup>a</sup>Number of positive/number of tests\*There is a statistically significant difference between the qPCR and LAMP methods ( $p < 0.05$ ).

Table S5. Comparison of positive results for *B. cepacia* complex using LAMP and qPCR in BZK.

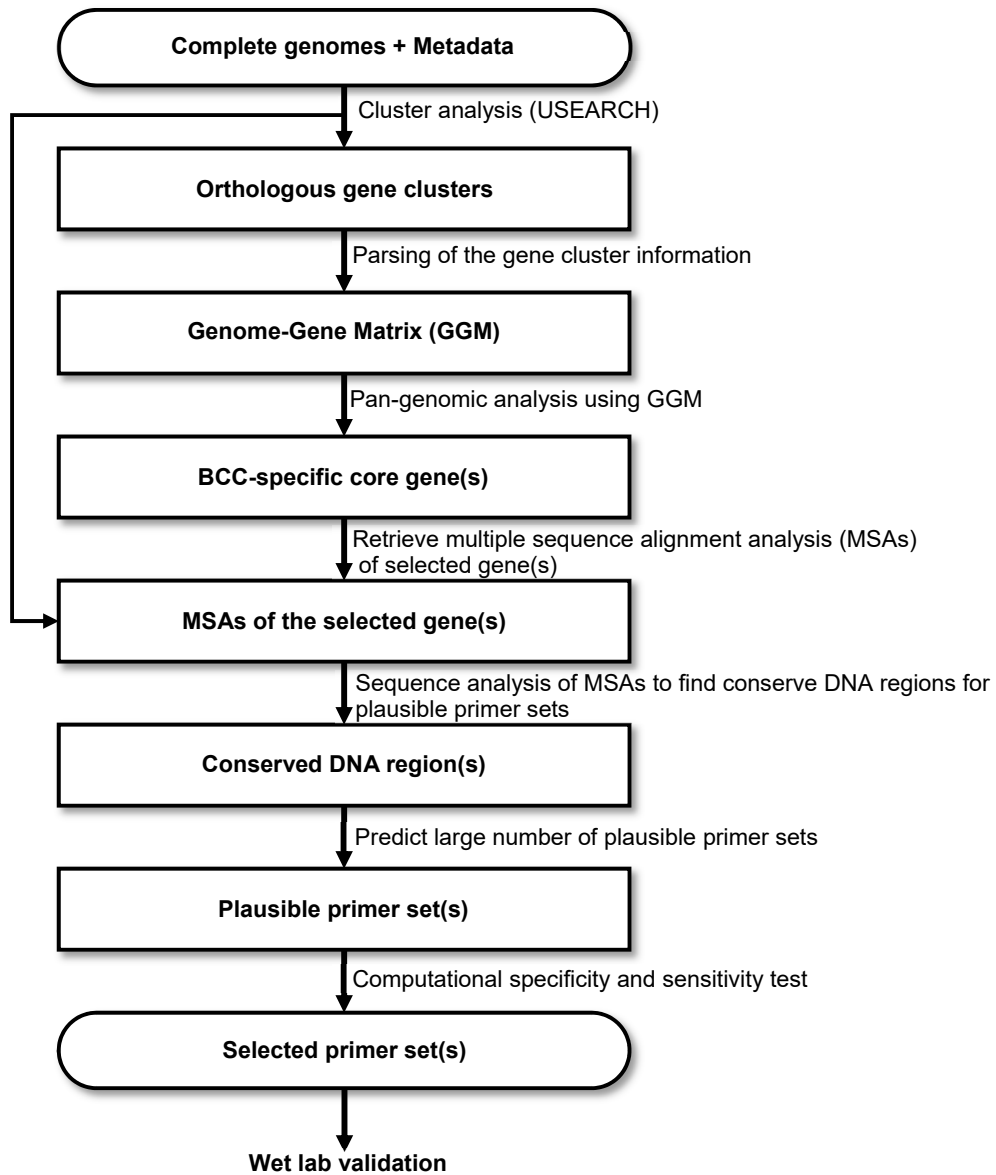
	Inoculum (CFU/ml)							
	10		10 <sup>2</sup>		10 <sup>3</sup>		10 <sup>4</sup>	
	LAMP	qPCR	LAMP	qPCR	LAMP	qPCR	LAMP	qPCR
1 <i>Burkholderia cepacia</i> PC783	0/6 <sup>a</sup>	0/6	0/6	0/6	2/6	4/6	4/6	0/6
2 <i>Burkholderia cepacia</i> AU24442	1/6	0/6	4/6	4/6	4/6	6/6	5/6	6/6
3 <i>Burkholderia stabilis</i> AU23340	3/6	0/6	3/6	3/6	2/6	4/6	4/6	3/6
4 <i>Burkholderia pyrrocinia</i> AU11057	2/6	0/6	3/6	0/6	2/6	2/6	5/6	1/6
5 <i>Burkholderia ambifaria</i> HI2468	3/6	0/6	1/6	0/6	3/6	4/6	2/6	4/6
6 <i>Burkholderia anthina</i> HI2738	2/6	0/6	3/6	3/6	4/6	6/6	4/6	6/6
7 <i>Burkholderia metallica</i> AU0553	2/6	0/6	2/6	4/6	6/6	6/6	4/6	6/6
8 <i>Burkholderia metallica</i> AU16697	5/6	0/6	5/6	2/6	6/6	6/6	5/6	6/6
9 <i>Burkholderia contaminans</i> HI3429	0/6	0/6	1/6	4/6	4/6	6/6	6/6	6/6
10 <i>Burkholderia contaminans</i> AU24637	0/6	0/6	1/6	0/6	4/6	4/6	6/6	6/6
11 <i>Burkholderia diffusa</i> AU1075	1/6	0/6	3/6	0/6	2/6	5/6	4/6	6/6
12 <i>Burkholderia arboris</i> ES0263a	2/6	0/6	1/6	1/6	2/6	4/6	4/6	6/6
13 <i>Burkholderia arboris</i> AU22095	2/6	0/6	1/6	0/6	2/6	6/6	3/6	6/6
14 <i>Burkholderia lata</i> HI4002	2/6	0/6	1/6	0/6	1/6	2/6	1/6	3/6
15 <i>Burkholderia cenocepacia</i> AU1054	2/6	0/6	2/6	0/6	1/6	3/6	0/6	4/6
16 <i>Burkholderia cenocepacia</i> AU0222	4/6	0/6	1/6	0/6	2/6	2/6	5/6	5/6
17 <i>Burkholderia cenocepacia</i> AU19236	2/6	0/6	2/6	0/6	2/6	5/6	2/6	4/6
18 <i>Burkholderia cenocepacia</i> HI2976	1/6	0/6	3/6	0/6	2/6	6/6	4/6	4/6
19 <i>Burkholderia cenocepacia</i> HI2485	5/6	0/6	4/6	3/6	2/6	4/6	1/6	6/6
20 <i>Burkholderia cenocepacia</i> J2315	3/6	0/6	4/6	2/6	4/6	6/6	0/6	6/6
<b>Total</b>	<b>42/120*</b> <b>(35.0%)</b>	<b>0/120</b> <b>(0.0%)</b>	<b>45/120*</b> <b>(37.5%)</b>	<b>26/120</b> <b>(21.7%)</b>	<b>57/120*</b> <b>(47.5%)</b>	<b>91/120</b> <b>(75.8%)</b>	<b>69/120*</b> <b>(57.5%)</b>	<b>94/120</b> <b>(78.3%)</b>

<sup>a</sup>Number of positive/number of tests\*There is a statistically significant difference between the qPCR and LAMP methods ( $p < 0.05$ ).

Figure S1. Venn diagram for the clusters of BCC group and non-BCC group. Among 174,715 orthologous gene clusters (with  $\geq 75\%$  sequence identity) observed across all 266 complete *Burkholderia* genomes, 206 BCC-specific gene clusters were identified (a) and work flow of primer design process (b).



(a)



(b)

Figure S2. Different reaction volume conditions (5, 10, 15, and 20  $\mu$ l) of LAMP assay using 10.3  $\mu$ g/ml and 1.03  $\mu$ g/ml of *B. cenocepacia* AU1054 at 65°C. Colorimetric LAMP for the detection of BCC using RibB 16 primer.

