

**Supplementary Table 1.** Primer sequences used for LAMP detection of influenza A virus (IAV).

Primer set	Primer name	Primer sequence (5'-3')	Target gene	Reported Sensitivity (or LOD)	References
Set 1	F3	GACGCACAACATCGGTCC	<i>Matrix</i>	$1 \times 10^2$ copies/ml	(1)
	B3	GGTGAGTCCCAACTGTTCTC			
	FIP	GCCGTAGTGCTGGCTAGTACCAACAGGCAGATGGCG ACTA			
	BIP	AAGGCTATGGAGCAGATGGCTGTGCCTAGCCTGACT TGCA			
	LF	TTCTATTCTCATGCCTAATTAGTGG			
	LB	GATCAAGTGAACAGGCAGCG			
Set 2	F3	GGGGTACTTCAAATACG	<i>Hemagglutinin</i>	0.5 copies/ $\mu$ L	(2)
	B3	GTTGCCAATTTCAAGTG			
	FIP	GAGTGATGCATTCAGAATTGCATTTTGGGAAAAGCT CAATAATGAGA			
	BIP	AATGGAAGCATTCCCAATGACAGCTTAACATATCTG GGACAGG			
	LF	CCAATGGGTGCATCTGA			
	LB	AACCATTCCAAAATGTAAAC			
Set 3	F3	TGGTGCACCTGCCAGTTG	<i>Matrix</i>	$10^3$ copies/mL	(3)
	B3	CCAGCCATCTGTTCCATAGC			
	FIP	TGCTGTGAATCAGCAATCTGTTACAGGATGGGAACA GTGACC			
	BIP	AGACAGATGGCTACTACCACCCGTAGTGCTAGCCAG CACC			

	LF	GCACACACTAGACCAAAGCAGCTT			
	LB	TCCACTAATCAGGCATGAAAACAG			
Set4	F3	GCCAGCACTACAGCTAAGG	<i>Matrix</i>	10 <sup>4</sup> RNA copies	(4)
	B3	CACTTGAACCGTTGCATCTG			
	FIP	CTTGCACCATTTGCCTAGCCTGTGGATCGAGTGAGC AAGCA			
	BIP	TGGGACTCATCCTAGCTCCAGTCACCCCATTCGTTT CTGA			
	LF	GTCCGATCCGTTTACCACGTTT			
	LB	TGGGACTCATCCTAGCTCCAGT			
Set5	F3	GACTKGAARRTGTCTTTGC	<i>Matrix</i>		(5)
	B3	TRTRTTTTGGGTCYCCATT			
	FIP	TTAGTCAGAGGTGACARRATTGCAGATCTTGAGGCT CTC			
	BIP	TTGKTTTACGCTCACCGTGTTTGGACAAAGCGTCTA CG			
	LF	GTCTTGCTTTAGCCA			
	LB	CMAGTGAGCGAGGACTG			
Set6	F3	GCAGGTAGATATTGAAAGATGAGTC	<i>Matrix</i>	10 <sup>2.5</sup> EID <sub>50</sub> /mL	(6)
	B3	CTCACTGGGCACGGTGA			
	FIP	GGCTTTGAGGGGCCTGATTCTAACCGAGGTCGAAA CG			
	BIP	CTTGAAGATGTCTTTGCAGGGAAGAACATAGTCAGA GGTGACAGGATTGG			
	LF	CGGGACGATAGAGAGAACGTA			

	LB	CGAGGCTCTCATGGAATGGCTAAAG			
Set7	F3	CAAGGAGGTGTCACATAAGC	<i>Matrix</i>	1,000 copies	(7)
	B3	CATCTGCCTAGTCTGATTAGC			
	FIP	GTGAGACCGATGCTGTGAATCAGGAACAGTGACCAC AGAAG			
	BIP	ACCACCAATCCACTAATCAGGCGCCATCTGTTCCAT AGCC			
	LF	TCTGTTACAAGTGGCACA			
	LB	ACAGAATGGTGCTGGCTAG			
Set8	F3	GTGTTACGCTCACCGTG	<i>Matrix</i>	100 copies/ $\mu$ L	(8)
	B3	ACAGTGCCAACAGACCCAAAG			
	FIP	GCTTCCATGTTGTTGGGTCCCACAGTGAGCGAGG ACTGCA			
	BIP	ACTTCCATGGGGCAAGAGTCCTCTCGTGGACGTC CCATCT			
	LF	GCATTTGGACAAACGTCTACGC			
	LB	AGTATCCGGTGCACTTGCC			
Set 9	F3	TTCTAACCGAGGTCGAAAC	<i>Matrix</i>	10 copies	(9, 10)
	B3	GGACAAAGCGTCTACGC			
	FIP	TGTTCTTYCCTGCAAAGACATCTATCATCCCGTCA G			
	BIP	CTAAAGACAAGACCAATCACTGGGCACGGTGAGC G			
	LF	TCTGYGCGATCTCGGCT			
	F3	TTCTAACCGAGGTCGAAAC			

Set 10	F3	TGGTGCRCTTGCCAGTTG	<i>Matrix</i>	10 copies	(11)
	B3	CCAGCCATTTGCTCCATAGC			
	FIP	TGCTGGGAGTCAGCAATCTGTTACAGRATGGGGG CTGTRACC			
	BIP	AGGCAAATGGTGRCAACAACCTGTAGTGCTGGCC ARAACC			

**Supplementary Table 1.** Specifications of LAMP primer sets for IAV detection. Ten primer sets (Sets 1-10) were implemented, each consisting of two outer (F3, B3), two inner (FIP, BIP), and two loop (LF, LB) primers. All sets target the viral movement protein (MP) gene except Set 2, which targets the hemagglutinin (HA) gene. Corresponding literature sources for primer design are cited in the rightmost column.

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