

Supplemental table 1: Primers

SARS-CoV-2 and Influenza B primers were found from the literature but modified for the sequence specific QUASR reporting system by us according to Ball et al. 2016. A gene with nasopharyngeal specific expression (Saferali et al. 2020), BPI fold containing family A, member 1 (BPIFA1), was used to design a sampling and process control using Primer Explorer v.4 (Eiken Chemical Co., Japan) to traverse exon/exon boundaries and therefore be mRNA specific (FIGURE). Primers were synthesized by IDT (Coraville, Iowa) and LGC Biosearch (Petaluma, CA). Primers modified with quenchers and TexasRed were purified by HPLC while all other primers were prepared by desalting. Lyophilized primers were reconstituted in water.

BPIFA1*	
FIP	ACAGCAGGCCATTGCTGAGGCTGCCCTTGAGTCCCACA
BIP	GAAAACCTTCCGCTCCTGGACATCCAAGCAGTCCCCCAAG
LF	GTCAAGCTTCCTGCAAGACC
LB-F	FAM-TCCTGAAGCCTGGAGGAGG
LB-Q	GGCTTCAGGA-BHQ1
F3	CCCTGCCCTTGAATGTGAAT
B3	GGCCAGGAATCACTGACG
SARS-CoV-2 NB/NA	<i>Zhang et al. 2020</i>
FIP	TCTGGCCCAGTTCTAGGTAGTTCGTGGTGGTGACGGTAA
BIP	AGACGGCATCATATGGGTTGCACGGGTGCCAATGTGATCT
LB	ACTGAGGGAGCCTTGAATACA
LF-TX**	5TexRd-CCATCTTGGACTGAGATCTTTCATT
LF-Q	CAGTCCAAGATGG-3IAbRQSp
F3	ACCGAAGAGCTACCAGACG
B3	TGCAGCATTGTTAGCAGGAT
NA-F3	TGGCTACTACCGAAGAGCT
Influenza B	<i>Ge et al. 2017</i>
FIP	TMARGGACAATACATTACGCATATCGATAAAGGAGGAAGTAAACACTCA
BIP	TAAAYGGAACATTCTCAAACACCACTCTGGTCATAGGCATTC
LF	TYAAACGGAACCTCCCTTCTTTC
LB-F	FAM-GGATACAAGTCCTTATYAACCTCTGC
LB-Q	AAGGACTTGTATTCC-BHQ1
F3	AGGGACATGAACAACAAAGA
B3	CAAGTTTAGCAACAAGCCT

SARS-CoV-2 NM	<i>Broughton et al. 2020</i>
FIP-F	FAM-TGCGGCCAATGTTTGTAAATCAGCCAAGGAAATTTGGGGAC
FIP-Q	CATTGGCCGCA-IABkFQ
BIP	CGCATTGGCATGGAAGTCACTTTGATGGCACCTGTGTAG
LF	TTCCTTGTCTGATTAGTTC
LB	ACCTTCGGGAACGTGGTT
F3	AACACAAGCTTTCGGCAG
B3	GAAATTTGGATCTTTGTCATCC

All sequences presented 5' to 3'

Y represents degenerate C or T; R represents degenerate A or G; M represents degenerate A or C

FAM=Fluorescein

TxRed=TexasRed

BHQ1= Black Hole Quencher 1

IAbRQSp= Iowa Black RQ-Sp

IABkFQ= Iowa Black FQ

* When used with NEB Colorimetric LAMP kit, a non-modified version of LB-F was used and LB-Q was omitted.

**In one iteration of this primer a FAM fluorophore is used at the 5' end.