

comprising the sequence of SEQ ID NO:15, and a probe comprising the sequence of SEQ ID NO:16. In one embodiment, the probe comprising the sequence of SEQ ID NO:13 further comprises a 5' FAM fluorophore and a 3' BHQ-1 quencher, the probe comprising the sequence of SEQ ID NO:14 further comprises a 5' CAL Fluor Orange 560 fluorophore and a 3' BHQ-1 quencher, the probe comprising the sequence of SEQ ID NO:15 further comprises a 5' CAL Fluor Red 610 fluorophore and a 3' BHQ-2 quencher, and the probe comprising the sequence of SEQ ID NO:16 further comprises a 5' Quasar Blue 670 fluorophore and a 3' BHQ-2 quencher.

In one aspect, there is provided an isolated oligonucleotide not more than 40 nucleotides in length comprising:

- (a) a nucleotide sequence comprising at least 10 contiguous nucleotides from a nucleotide sequence selected from the group consisting essentially of SEQ ID NOS: 7 and 9-21;
- (b) a nucleotide sequence that differs from a nucleotide sequence selected from the group consisting essentially of SEQ ID NOS: 7 and 9-21 by up to three nucleotide changes, wherein the oligonucleotide is capable of hybridizing to and amplifying dengue virus nucleic acids; or
- (c) complements of (a) and (b).

In another embodiment, the disclosure includes an isolated oligonucleotide not more than 40 nucleotides in length comprising a nucleotide sequence comprising at least 10 contiguous nucleotides from a nucleotide sequence selected from the group consisting of SEQ ID NOS:5-21; or variants thereof comprising a nucleotide sequence that differs from a nucleotide sequence selected from the group consisting of SEQ ID NOS:5-21 by up to three nucleotide changes, wherein the oligonucleotide is capable of hybridizing to and amplifying and/or detecting dengue virus nucleic acids; or complements thereof.

Oligonucleotides may further comprise a detectable label. For example, the detectable label may be a fluorophore such as, but not limited to carboxyfluorescein (FAM), CAL Fluor Orange 560, CAL Fluor Red 610, Quasar Blue 670, 6-carboxyfluorescein (6-FAM), tetramethyl rhodamine (TAMRA), and 2', 4', 5', 7'- tetrachloro-4-7-dichlorofluorescein (TET). The oligonucleotide may further comprise a quencher such as, but not limited to a black hole quencher (BHQ), tetramethyl rhodamine (TAMRA), dabcyI, and a minor groove binder (MGB). In certain embodiments, the oligonucleotide is selected from the group consisting of: an oligonucleotide consisting of a

nucleotide sequence selected from the group consisting of SEQ ID NOS:5-21 or a complement thereof.

In one aspect, there is provided a primer set comprising two or more isolated oligonucleotides, each selected from the group consisting essentially of:

- (a) an oligonucleotide consisting essentially of a nucleotide sequence selected from the group consisting essentially of SEQ ID NOS:~~5-21~~7 and 9-21;
- (b) an oligonucleotide complementary to an oligonucleotide of (a); and
- (c) a combination of an oligonucleotide selected from (a) and (b).

In one aspect, there is provided a kit for detecting dengue virus in a biological sample, the kit comprising:

written instructions for identifying the presence of dengue virus; and
at least one set of primers comprising a forward primer and a reverse primer capable of amplifying at least a portion of a dengue virus genome, said portion comprising a 5' UTR sequence or a dengue capsid coding sequence, wherein said primers are not more than about 40 nucleotides in length, wherein said set of primers is selected from the group consisting essentially of:

(a) a forward primer comprising the sequence of SEQ ID NO:5 and a reverse primer comprising the sequence of SEQ ID NO:9;

(b) a forward primer comprising the sequence of SEQ ID NO:5 and a reverse primer comprising the sequence of SEQ ID NO:10;

(c) a forward primer comprising the sequence of SEQ ID NO:5 and a reverse primer comprising the sequence of SEQ ID NO:11;

(d) a forward primer comprising the sequence of ~~SEQ~~ SEQ ID NO:6 and a reverse primer comprising the sequence of SEQ ID NO:10;

(e) a forward primer comprising the sequence of SEQ ID NO:6 and a reverse primer comprising the sequence of SEQ ID NO:11;

(f) a forward primer comprising the sequence of SEQ ID NO:7 and a reverse primer comprising the sequence of ~~SEQ~~ SEQ ID NO:9;

(g) a forward primer comprising the sequence of SEQ ID NO:8 and a reverse primer comprising the sequence of SEQ ID NO:12;

(h) a forward primer and a reverse primer each comprising at least 10 contiguous nucleotides from the corresponding nucleotide sequences of the forward primer and reverse primer of a primer set selected from the group consisting essentially of (a)-(g);

12. The method of claim 6, wherein amplifying comprises reverse transcriptase polymerase chain reaction (RT-PCR), nucleic acid sequence based amplification (NASBA), transcription-mediated amplification (TMA), or a fluorogenic 5' nuclease assay, or a combination thereof.

13. The method of claim 7, wherein the primers and probes that are used for detecting dengue virus in a biological sample comprise a primer comprising the sequence of SEQ ID NO:5, a primer comprising the sequence of SEQ ID NO:6, a primer comprising the sequence of SEQ ID NO:7, a primer comprising the sequence of SEQ ID NO:8, a primer comprising the sequence of SEQ ID NO:9, a primer comprising the sequence of SEQ ID NO:10, a primer comprising the sequence of SEQ ID NO:11, a primer comprising the sequence of SEQ ID NO:12, a probe comprising the sequence of SEQ ID NO:13, a probe comprising the sequence of SEQ ID NO:14, a probe comprising the sequence of SEQ ID NO:15, and a probe comprising the sequence of SEQ ID NO:16.

14. The method of claim 6, further comprising serotyping the dengue virus present in the biological sample by detecting the presence of at least one target sequence selected from the group consisting essentially of a dengue-1 target sequence, a dengue-2 target sequence, a dengue-3 target sequence, and a dengue-4 target sequence.

15. An isolated oligonucleotide not more than 40 nucleotides in length comprising:

(a) a nucleotide sequence comprising at least 10 contiguous nucleotides from a nucleotide sequence selected from the group consisting essentially of SEQ ID NOS: 7 and 9-215-24;

(b) a nucleotide sequence that differs from a nucleotide sequence selected from the group consisting essentially of SEQ ID NOS: 7 and 9-215-24 by up to three nucleotide changes, wherein the oligonucleotide is capable of hybridizing to and amplifying dengue virus nucleic acids; or

(c) complements of (a) and (b).

16. A primer set comprising two or more isolated oligonucleotides, each selected from the group consisting essentially of:

- (a) an oligonucleotide consisting essentially of a nucleotide sequence selected from the group consisting essentially of SEQ ID NOS: 7 and 95-21;
 - (b) an oligonucleotide complementary to an oligonucleotide of (a);
- and

- (c) a combination of an oligonucleotide selected from (a) and (b).

17. A kit for detecting dengue virus in a biological sample, the kit comprising:

written instructions for identifying the presence of dengue virus; and at least one set of primers comprising a forward primer and a reverse primer capable of amplifying at least a portion of a dengue virus genome, said portion comprising a 5' UTR sequence or a dengue capsid coding sequence, wherein said primers are not more than about 40 nucleotides in length, wherein said set of primers is selected from the group consisting essentially of:

- (a) a forward primer comprising the sequence of SEQ ID NO:5 and a reverse primer comprising the sequence of SEQ ID NO:9;
- (b) a forward primer comprising the sequence of SEQ ID NO:5 and a reverse primer comprising the sequence of SEQ ID NO:10;
- (c) a forward primer comprising the sequence of SEQ ID NO:5 and a reverse primer comprising the sequence of SEQ ID NO:11;
- (d) a forward primer comprising the sequence of ~~SEQ ID~~ SEQ ID NO:6 and a reverse primer comprising the sequence of SEQ ID NO:10;
- (e) a forward primer comprising the sequence of SEQ ID NO:6 and a reverse primer comprising the sequence of SEQ ID NO:11;
- (f) a forward primer comprising the sequence of SEQ ID NO:7 and a reverse primer comprising the sequence of ~~SEQ ID~~ SEQ ID NO:9;
- (g) a forward primer comprising the sequence of SEQ ID NO:8 and a reverse primer comprising the sequence of SEQ ID NO:12;
- (h) a forward primer and a reverse primer each comprising at least 10 contiguous nucleotides from the corresponding nucleotide sequences of the forward primer and reverse primer of a primer set selected from the group consisting essentially of (a)-(g);