CLAIMS

1. A method for specifically detecting *Plasmodium* species nucleic acid in a sample, said method comprising:

(1) contacting a sample, said sample suspected of containing *Plasmodium* species nucleic acid, with at least two oligomers for amplifying a target region of a *Plasmodium* species target nucleic acid, wherein the at least two amplification oligomers comprise:

(a) an amplification oligomer comprising a target-hybridizing sequence

(i) that is from 14 to 20 contiguous nucleotides in length, is contained in the sequence of SEQ ID NO:162, and comprises the sequence of SEQ ID NO:163; or

(ii) that is from 14 to 25 contiguous nucleotides in length, is contained in the sequence of SEQ ID NO:166, and comprises the sequence of SEQ ID NO:167 or SEQ ID NO:168; and

(b) an amplification oligomer comprising a target-hybridizing sequence that is from 15 to 33 contiguous nucleotides in length, is contained in SEQ ID NO:169 and comprises the sequence of SEQ ID NO:171, SEQ ID NO:172, or SEQ ID NO:173;

(2) performing an *in vitro* nucleic acid amplification reaction, wherein any *Plasmodium* target nucleic acid present in said sample is used as a template for generating an amplification product; and

(3) detecting the presence or absence of the amplification product, thereby indicating the presence or absence of *Plasmodium* species target nucleic acid in said sample.

2. The method of claim 1, wherein the amplification oligomer of (b) is a promoter primer or promoter provider further comprising a promoter sequence located 5' to the target-hybridizing sequence of (b), optionally wherein the promoter sequence is a T7 promoter sequence, optionally wherein the amplification oligomer of (b) comprises a sequence selected from the group consisting of SEQ ID NOs:57-59 and 62-77.

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3. The method of any one of the preceding claims, further comprising purifying the target nucleic acid from other components in the sample before step (1), optionally wherein the purifying step comprises contacting the sample with at least one capture probe oligomer comprising a target-hybridizing sequence covalently attached to a sequence or moiety that binds to an immobilized probe, wherein said target-hybridizing sequence is up to 30 contiguous nucleotides in length and comprises a sequence selected from the group consisting of SEQ ID NOs:11-15, 17, 19, and 20, including DNA equivalents and DNA/RNA chimerics thereof.

4. The method of any one of the preceding claims, wherein the detecting step (3) comprises contacting the *in vitro* nucleic acid amplification reaction with at least one detection probe oligomer comprising a target-hybridizing sequence configured to specifically hybridize to the amplification product under conditions whereby the presence or absence of the amplification product is determined, thereby indicating the presence or absence of *Plasmodium* species in said sample.

5. A combination of at least two oligomers for determining the presence or absence of *Plasmodium* species in a sample, said oligomer combination comprising at least two oligomers for amplifying a target region of *Plasmodium* species target nucleic acid, wherein the at least two amplification oligomers comprise:

(a) an amplification oligomer comprising a target-hybridizing sequence

(i) that is from 14 to 20 contiguous nucleotides in length, is contained in the sequence of SEQ ID NO:162, and comprises the sequence of SEQ ID NO:163; or

(ii) that is from 14 to 25 contiguous nucleotides in length, is contained in the sequence of SEQ ID NO:166, and comprises the sequence of SEQ ID NO:167 or SEQ ID NO:168; and

(b) an amplification oligomer comprising a target-hybridizing sequence that is from 15 to 33 contiguous nucleotides in length, is contained in SEQ ID NO:169 and comprises the sequence of SEQ ID NO:171, SEQ ID NO:172, or SEQ ID NO:173.

6. The oligomer combination of claim 5, wherein the at least two amplification oligomers comprise the amplification oligomer of (a)(i),

wherein the target-hybridizing sequence of (a)(i) is selected from the group consisting of SEQ ID NOs:21, 23-25, 32, 33, 35, 54, and 55,

or wherein the target-hybridizing sequence of (a)(i) is contained in the sequence of SEQ ID NO:164, comprises the sequence of SEQ ID NO:165, and is optionally selected from the group consisting of SEQ ID NOs:21, 23-25, 32, 33, and 35.

7. The oligomer combination of claim 5, wherein the at least two amplification oligomers comprise the amplification oligomer of (a)(ii),

wherein the target-hybridizing sequence of (a)(ii) comprises the sequence of SEQ ID NO:167 and is optionally selected from the group consisting of SEQ ID NOs:28-31, 34, 40, 41, and 49-51; or,

wherein the target-hybridizing sequence of (a)(ii) comprises the sequence of SEQ ID NO:168 and is optionally selected from the group consisting of SEQ ID NOs:38, 39, 43, 44, and 53.

8. The oligomer combination of any one of claims 5 to 7, wherein the target-hybridizing sequence of (b) is selected from the group consisting of SEQ ID NOs:80-82 and 85-100,

or wherein the target-hybridizing sequence of (b) is contained in SEQ ID NO:170, comprises the sequence of SEQ ID NO:171 or SEQ ID NO:172, and is optionally selected from (i) the group consisting of SEQ ID NOs:81, 82, 85, 87-90, 94, and 96-98 or (ii) the group consisting of SEQ ID NOs:80, 82, 85, and 87-100.

9. The oligomer combination of any one of claims 5 to 8, wherein the amplification oligomer of (b) is a promoter primer or promoter provider further comprising a promoter sequence located 5' to the target-hybridizing sequence of (b), optionally wherein the promoter sequence is a T7 promoter sequence, optionally wherein the amplification oligomer of (b) comprises a sequence selected from the group consisting of SEQ ID NOs:57-59 and 62-77.

10. The oligomer combination of claim 5, wherein the at least two amplification oligomers comprise first and second amplification oligomers as in (a)(ii), optionally wherein

the first amplification oligomer as in (a)(ii) comprises a target-hybridizing sequence comprising the sequence of SEQ ID NO:167, optionally wherein the first amplification oligomer target-hybridizing sequence is SEQ ID NO:34; and

the second amplification oligomer as in (a)(ii) comprises a target-hybridizing sequence comprising the sequence of SEQ ID NO:168, optionally wherein the second amplification oligomer target-hybridizing sequence is SEQ ID NO:53.

11. The oligomer combination of claim 5, wherein the at least two amplification oligomers comprise an amplification oligomer as in (a)(i) and an amplification oligomer as in (a)(ii), optionally wherein

the amplification oligomer as in (a)(i) comprises a target-hybridizing sequence that is contained in the sequence of SEQ ID NO:164 and comprises the sequence of SEQ ID NO:165, optionally wherein the amplification oligomer as in (a)(i) comprises the target-hybridizing sequence of SEQ ID NO:21; and

the amplification oligomer as in (a)(ii) comprises the sequence of SEQ ID NO:167, optionally wherein the amplification oligomer as in (a)(ii) comprises the target-hybridizing sequence of SEQ ID NO:34.

12. The oligomer combination of any one of claims 10 and 11, wherein the at least two amplification oligomers comprise first and second amplification oligomers of (b), optionally wherein each of the first and second amplification oligomers of (b) comprises a target-hybridizing sequence that is contained in SEQ ID NO:170 and comprises the sequence of SEQ ID NO:171 or SEQ ID NO:172,

optionally wherein the first amplification oligomer as in (b) comprises the target-hybridizing sequence of SEQ ID NO:94 and the second amplification oligomer as in (b) comprises the target-hybridizing sequence of SEQ ID NO:95.

13. The oligomer combination of any one of claims 5 to 12, further comprising at least one capture probe oligomer comprising a target-hybridizing sequence covalently attached to a sequence or moiety that binds to an immobilized probe, wherein said target-hybridizing sequence is up to 30 contiguous nucleotides in length and comprises a sequence selected from the group consisting of SEQ ID NOs:11-15, 17, 19, and 20, including DNA equivalents and DNA/RNA chimerics thereof.

14. The oligomer combination of any one of claims 5 to 13, further comprising at least one detection probe oligomer comprising a target-hybridizing sequence configured to specifically hybridize to a *Plasmodium* species amplicon amplifiable by the at least two amplification oligomers.

15. The oligomer combination of claim 14, wherein the detection probe oligomer comprises:

(a) a target-hybridizing sequence that is from 13 to 40 contiguous nucleotides in length, is contained in the sequence of SEQ ID NO:196 or its complement, or a DNA equivalent or DNA/RNA chimeric thereof; and comprises the sequence of SEQ ID NO:175, SEQ ID NO:176, SEQ ID NO:177, or SEQ ID NO:178;

(b) a target-hybridizing sequence that is contained in the sequence of SEQ ID NO:197 or its complement, or a DNA equivalent or DNA/RNA chimeric thereof, and comprises the sequence of SEQ ID NO:174, SEQ ID NO:175, or SEQ ID NO:176;

(c) a target-hybridizing sequence comprising the sequence of any of SEQ ID NO:131-146; or

(d) the sequence of any of SEQ ID NO:147-161.