

WHAT IS CLAIMED IS:

1. A LAMP primer set, comprising LAMP primers of FIP, BIP, F3, and B3, and at least one additional primer,

wherein the LAMP primers of FIP, BIP, F3, and B3 target regions F3, F2, F1C, B1C, B2, and B3 on nucleic acids, and the regions F3, F2, F1, B1C, B2C, and B3C are located in order from 5' end to 3' end of a forward strand of the nucleic acids;

wherein the primer FIP comprises oligonucleotides targeting the regions F1C and F2, and the primer BIP comprises oligonucleotides targeting the regions B1C and B2; and

wherein the at least one additional primer targets a region located outside a region from F3 to B3.

2. The LAMP primer set according to claim 1, wherein the nucleic acids are DNA or RNA.

3. The LAMP primer set according to claim 1, wherein the targeted region of the at least one additional primer is located upstream of the region F3 or the region B3.

4. The LAMP primer set according to claim 1, wherein the at least one additional primer comprises at least one pair of additional primers targeting regions F4 and B4, the region F4 is located upstream of the region F3, and the region B4 is located upstream of the region B3.

5. The LAMP primer set according to claim 1, wherein the at least one additional primer comprises two pairs of additional primers targeting regions F4, B4, F5, and B5, the region F5 is located upstream of the region F4 which is located upstream of the region F3, and the region B5 is located upstream of the region B4 which is located upstream of the region B3.

6. The LAMP primer set according to claim 1, wherein the at least one additional primer comprises three pairs of additional primers targeting regions F4, B4, F5, B5, F6, and B6, the region F6 is located upstream of the region F5, the region F4, and the region F3 in turn, and the region B6 is located upstream of the region B5, the region B4, and the region B3 in turn.

7. The LAMP primer set according to claim 1, wherein a working concentration of the at least one additional primer is in a range of 0.1 μ M to 2 μ M.

8. The LAMP primer set according to claim 1, wherein the region from F3 to B3 is at least 200 nucleotides long.

9. A method for amplifying nucleic acids, comprising steps of:

providing LAMP primers of FIP, BIP, F3, and B3, wherein the LAMP primers of FIP, BIP, F3, and B3 target regions F3, F2, F1C, B1C, B2, and B3 on nucleic acids, and the regions

F3, F2, F1, B1C, B2C, and B3C are located in order from 5' end to 3' end of a forward strand of the nucleic acids, wherein the primer FIP comprises oligonucleotides targeting the regions F1C and F2, and the primer BIP comprises oligonucleotides targeting the regions B1C and B2;

providing at least one additional primer, wherein the at least one additional primer targets a region located outside a region from F3 to B3; and

amplifying nucleic acids of a sample with the LAMP primers of FIP, BIP, F3, and B3 and the at least one additional primer.

10. The method according to claim 9, wherein the nucleic acids are amplified using a polymerase with strand-displacement activity.

11. The method according to claim 9, wherein the nucleic acids are DNA or RNA.

12. The method according to claim 9, wherein the targeted region of the at least one additional primer is located upstream of the region F3 or the region B3.

13. The method according to claim 9, wherein the at least one additional primer comprises at least one pair of additional primers targeting regions F4 and B4, the region F4 is located upstream of the region F3, and the region B4 is located upstream of the region B3.

14. The method according to claim 9, wherein the at least one additional primer comprises two pairs of additional primers targeting regions F4, B4, F5, and B5, the region F5 is located upstream of the region F4 which is located upstream of the region F3, and the region B5 is located upstream of the region B4 which is located upstream of the region B3.

15. The method according to claim 9, wherein the at least one additional primer comprises three pairs of additional primers targeting regions F4, B4, F5, B5, F6, and B6, the region F6 is located upstream of the region F5, the region F4, and the region F3 in turn, and the region B6 is located upstream of the region B5, the region B4, and the region B3 in turn.

16. The method according to claim 9, wherein a working concentration of the at least one additional primer is in a range of 0.1 μ M to 2 μ M.

17. The method according to claim 9, wherein the region from F3 to B3 is at least 200 nucleotides long.