Claims:

[Claim 1]. A method of forming a PCR detection kit comprising:

printing a first nucleotide probe, a first nucleotide forward primer and a first nucleotide reverse primer in a printer buffer together into each of a plurality of first wells within one plate;

printing a second nucleotide probe, a second nucleotide forward primer and a second nucleotide reverse primer in a printer buffer together into each of a plurality of second wells adjacent the first wells within the one plate;

drying the wells optionally in an oven; and

vacuum sealing the plate.

[Claim 2]. The method according to claim 1, wherein the first nucleotide probe comprises SEQ ID NO. 5, the first nucleotide forward primer comprises SEQ ID NO. 3, the first nucleotide reverse primer comprises SEQ ID NO. 4, the second nucleotide probe comprises SEQ ID NO. 8; the second nucleotide forward primer comprises SEQ ID NO. 6; and the second nucleotide reverse primer comprises SEQ ID NO. 7.

[Claim 3]. The method according to claim 1 or 2, wherein the plurality of first wells comprises a row of wells for detection of a first target nucleic acid sequence and the plurality of second wells comprise a row of wells for detection of a second target nucleic acid sequence.

[Claim 4]. The method according to claim 3, wherein each well of the row of wells in the plurality of first wells is printed with the first nucleotide probe comprising SEQ ID NO. 5; the first nucleotide forward primer comprising SEQ ID NO. 3; and the first nucleotide reverse primer comprising SEQ ID NO. 4; and in each well of the row of wells in the plurality of second wells is printed with the nucleotide probe comprising SEQ ID NO. 8; the nucleotide forward primer comprising SEQ ID NO. 6; and the nucleotide reverse primer comprising SEQ ID NO. 7.

[Claim 5]. The method according to any one of claims 1 to 4, further comprises printing at least one well in the plate with a control nucleotide probe, a control nucleotide forward primer and a control nucleotide reverse primer in a printer buffer prior to drying and sealing the plate.

[Claim 6]. The method according to claim 5, wherein the control nucleotide probe comprises SEQ ID NO. 12; the control nucleotide forward primer comprises SEQ ID NO. 10 and the control nucleotide reverse primer comprises SEQ ID NO. 11.

~~7. The method according to any one of claims 1 to 6, wherein the wells are dried in an oven.~~

[Claim 7~~8~~]. The method according to any one of claims 1 to ~~7~~6, wherein the plate comprises a 96 well plate and/or ~~.~~

~~9. The method according to any one of claims 1 to 8, further comprising packing~~ a plurality of the plates are packed into one box.

[Claim 8~~10~~]. A polymerase chain reaction (PCR) detection kit comprising dried and sealed first nucleotide probe, first nucleotide forward primer and first nucleotide reverse primer pre-printed together into each of a plurality of first wells within one plate, second nucleotide probe, second nucleotide forward primer and second nucleotide reverse primer pre-printed together into each of a plurality of second wells adjacent the first wells within the one plate~~.~~

~~11. The kit according to claim 10~~, wherein the first nucleotide probe comprises SEQ ID NO. 5, the first nucleotide forward primer comprises SEQ ID NO. 3, the first nucleotide reverse primer comprises SEQ ID NO. 4, the second nucleotide probe comprises SEQ ID NO. 8; the second nucleotide forward primer comprises SEQ ID NO. 6; and the second nucleotide reverse primer comprises SEQ ID NO. 7.

[Claim 9~~12~~]. The kit according to claim 8~~10 or 11~~, wherein the plurality of first wells comprises a row of wells for detection of a first target nucleic acid sequence and the plurality of second wells comprise a row of wells for detection of a second target nucleic acid sequence, optionally wherein the plate comprises a 96 well plate.

[Claim 10~~13~~]. The kit according to claim ~~12~~9, wherein each row of wells of the first plurality of wells is pre-printed with the nucleotide probe comprises SEQ ID NO. 5; the nucleotide forward primer comprises SEQ ID NO. 3; and the nucleotide reverse primer comprises SEQ ID NO. 4; and in each row of wells of the second plurality of wells is pre-printed with the nucleotide probe comprises SEQ ID NO. 8; the nucleotide forward primer comprises SEQ ID NO. 6; and the nucleotide reverse primer comprises SEQ ID NO. 7.

[Claim 1114]. The kit according to any one of claims 10 8 to 1310, further comprising at least one well in the plate pre-printed with a control nucleotide probe, a control nucleotide forward primer and a control nucleotide reverse primer.

[Claim 1215]. The kit according to claim 1413, wherein the control nucleotide probe comprises SEQ ID NO. 12; the control nucleotide forward primer comprises SEQ ID NO. 10 and the control nucleotide reverse primer comprises SEQ ID NO. 11.

16. The kit according to any one of claims 10 to 15, wherein the plate comprises a 96 well plate.

[Claim 1317]. The kit according to any one of claims 10 8 to 1612, further comprising a plurality of plates.

[Claim 1418]. The kit according to any one of claims 10 8 to 1713, further comprising a second kit containing PCR reagents for use with the pre-printed primers and probes in the plurality of wells within the plate.

[Claim 1519]. A method for detecting the presence of an infectious agent in a sample comprising:

isolating nucleic acid from the sample;

adding PCR reagents and the isolated nucleic acid into a first well having first nucleotide probe, first nucleotide forward primer and first nucleotide reverse primer pre-printed and dried therein;

adding PCR reagents and the isolated nucleic acid into a second well having second nucleotide probe, second nucleotide forward primer and second nucleotide reverse primer pre-printed and dried therein;

run a PCR reaction; and

determine whether the sample has the infectious agent present wherein the infectious agent is a coronavirus.

20. The method according to claim 19, wherein the infectious agent is a virus.

21. The method according to claim 19 or 20, wherein the infectious agent is an RNA virus.

22. The method according to claim 19, wherein the infectious agent is a coronavirus.

[Claim 1623]. The method according to claim 1915, wherein the infectious agent is a SARS CoV-2 coronavirus.

[Claim 1724]. The method according to claim 2316, the first nucleotide probe comprises SEQ ID NO. 5, the first nucleotide forward primer comprises SEQ ID NO. 3, the first nucleotide reverse primer comprises SEQ ID NO. 4, the second nucleotide probe comprises SEQ ID NO. 8; the second nucleotide forward primer comprises SEQ ID NO. 6; and the second nucleotide reverse primer comprises SEQ ID NO. 7.

[Claim 1825]. The method according to claim 2316, wherein the first well comprises the first nucleotide probe comprising SEQ ID NO. 5; the first nucleotide forward primer comprising SEQ ID NO. 3; and the first nucleotide reverse primer comprising SEQ ID NO. 4 pre-printed and dried therein and the second well comprises the second nucleotide probe comprising SEQ ID NO. 8; the second nucleotide forward primer comprising SEQ ID NO. 6; and the second nucleotide reverse primer comprising SEQ ID NO. 7 pre-printed and dried therein.

[Claim 1926]. The method according to any one of claims 19–15 to 2518, further comprising having a well comprising a negative and/or a positive control.

[Claim 2027]. The method according to any one of claims 19–15 to 2619, further comprising spiking the sample with a nucleic acid sequence unrelated to the infectious disease; adding PCR reagents and the spiked isolated nucleic acid into a third well having a control nucleotide probe, a control nucleotide forward primer and a control nucleotide reverse primer pre-printed and dried therein and detecting the presence of the nucleic acid sequence unrelated to the infectious disease in the third well as a positive control.

28. The method according to claim 27, wherein the control nucleotide probe comprises SEQ ID NO. 12; the control nucleotide forward primer comprises SEQ ID NO. 10 and the control nucleotide reverse primer comprises SEQ ID NO. 11.