

CLAIMS

WHAT IS CLAIMED IS:

1. A method for performing a polymerase chain reaction (PCR) analysis of a first sample containing or suspected of containing an analyte, comprising:
 - (a) providing said first sample to a first location of a substrate, wherein said first location has a first volume configured to retain said first sample and permit said first sample to be subjected to a condition for a first PCR reaction, wherein said substrate further comprises a second location comprising a second sample undergoing a second PCR reaction;
 - (b) using a first element disposed adjacent to said first location to affect said condition in said first location to thereby initiate said first PCR reaction using said first sample, wherein said first PCR reaction generates a signal or signal change which is indicative of a property associated with said analyte;
 - (c) using a second element operably coupled to said first element to adjust an operating condition of said first element at least partially in response to said signal or signal change, to thereby affect said condition in said first location; and
 - (d) adjusting said operating condition of said first element to decrease a rate of said first PCR reaction upon said signal or signal change reaching a predetermined threshold, wherein said second PCR reaction continues within said second location after said first PCR reaction in said first location is stopped.
2. The method of claim 1, wherein prior to (d), a cycle number in said first location is different from a cycle number in said second location.
3. The method of claim 1 or 2, wherein said substrate is a multi-well plate.
4. The method of any one of claims 1-3, wherein said first location and said second location are spatially distinguishable and independently addressable.

5. The method of any one of claims 1-4, wherein said method does not comprise pre-normalization.
6. The method of any one of claims 1-5, wherein said method does not comprise pre-quantification.
7. The method of any one of claims 1-6, wherein said predetermined threshold is a predetermined normalization threshold.
8. The method of any one of claims 1-7, wherein said predetermined threshold is a predetermined level of fluorescent intensity.
9. The method of any one of claims 1-8, wherein said condition is a temperature condition.
10. The method of any one of claims 1-9, wherein said condition is a magnetic field condition.
11. The method of any one of claims 1-10, wherein said condition is an optical condition.
12. The method of any one of claims 1-11, wherein said signal or signal change comprises an optical signal or optical signal change.
13. The method of any one of claims 3-12, wherein said first location and said second location are respective wells comprised in said multi-well plate.
14. The method of any one of claims 1-13, wherein said property is a presence, an absence, an amount, or a concentration of said analyte.
15. The method of claim 14, wherein said presence or said absence of said analyte is determined with a sensitivity of at least about 90%.
16. The method of claim 14 or 15, wherein said presence or said absence of said analyte is determined with a specificity of at least about 90%.
17. The method of any one of claims 14-16, wherein said presence or said absence of said analyte is determined with an accuracy of at least about 90%.

18. The method of any one of claims 1-17, wherein said first element is a thermoelectric heating element.
19. The method of any one of claims 1-18, wherein said second element is an optical source.
20. The method of any one of claims 1-19, wherein said first sample does not comprise an internal standard.