Claims

1. A device for use with a fluid sample, the device comprising:

a conjugate pad including conjugates for a target analyte; and

a test grid including a plurality of zones in a two-dimensional grid, the test grid including:

a first test zone in the plurality of zones including at least one of first immobilized antibodies or first immobilized antigens to attach to the target analyte labeled with a first conjugate of the conjugates; and

a second test zone in the plurality of zones including at least one of second immobilized antibodies or second immobilized antigens to attach to the target analyte labeled with a second conjugate of the conjugates.

2. The device of claim 1, wherein a location of the first test zone and the second test zone within the test grid is related to identifying information of the device.

3. The device of claim 2, wherein the identifying information is included on a housing of the device.

4. The device of claim 1, wherein the target analyte is a first target analyte, the conjugates are first conjugates, and the conjugate pad includes second conjugates for a second target analyte,

wherein the test grid includes a third test zone in the plurality of zones including at least one of third immobilized antibodies or third immobilized

antigens to attach to the second target analyte labeled with a conjugate of the second conjugates.

5. The device of claim 1, wherein the test grid includes a control zone in the plurality of zones including at least one of third immobilized antibodies or third immobilized antigens to attach to conjugates not bound to the target analyte.

6. The device of claim 1, wherein the test grid includes a blank zone in the plurality of zones that does not include immobilized antibodies or immobilized antigens.

7. A method of generating a testing grid of a device for use with a fluid sample, the method comprising:

obtaining a code corresponding to identification information on the device;

determining a test grid pattern value based on the identification information; and

applying at least one of immobilized antibodies or immobilized antigens corresponding to a target analyte to a zone in a two dimensional test grid on a porous membrane of the device according to a test grid pattern corresponding to the test grid pattern value.

8. The method of claim 7, wherein the code corresponds to at least one of a production date, an expiry date, or a production identifier.

9. The method of claim 7, further including calculating a modulo based on the identification information to determine the test grid pattern value.

10. The method of claim 7, wherein different identification information corresponds to different test grid patterns.

11. The method of claim 7, further including applying a calibration pattern to a housing of the device.

12. The method of claim 7, wherein the code is printed on a housing of the device.

13. The method of claim 7, wherein the two dimensional test grid includes one or more zones corresponding to one or more test analytes.

14. The method of claim 7, wherein the test grid pattern corresponds to a number of target analytes and a number of parts per line, a total number of different combinations for the testing grid pattern of the two dimensional grid being equal to a factorial of the number of parts per line to a power of the number of the target analytes.

15. A method for reading a fluid sample on a device, the method comprising:

obtaining a code corresponding to a device;

obtaining test zone information related to test zones based on the code;

identifying target zones that correspond to a target analyte based on the test zone information; and

determining a result corresponding to a presence of the target analyte based on a presence or an absence of an optical signal in respective ones of the target zones in an image of a test grid of the device.

16. The method of claim 15, wherein the code is obtained from a user interface or a sensor.

17. The method of claim 15, further including performing a modulo operation on the code to determine a value, the test zone information corresponding to the value.

18. The method of claim 15, further including:

processing an image of a calibration pattern on the housing; and

assessing a calibration of the device based on the calibration pattern.

19. The method of claim 18, further including preventing the determining of the result when the calibration indicates that the device is not calibrated.

20. The method of claim 15, wherein the optical signal includes a color, wherein the determining of the result includes:

when more than a first threshold of the target zones in the image correspond to a first color, determining a positive result; and

when more than a second threshold of the target zones in the image correspond to a second color, determining a negative result.

21. The method of claim 15, further including:

obtaining the image using a sensor of a mobile device, the mobile device determining the result; and

displaying the result on a display of the mobile device.

22. The method of claim 15, wherein the obtaining of the test information includes selecting a test grid pattern corresponding to the code.