

10. The POC device as recited in claim 1, wherein the one or more processors further identify the test cartridge connected to the test cartridge interface using a code printed on the test cartridge, a RFID tag, one or more electrical or physical contacts of the test cartridge, or a combination thereof.

11. The POC device as recited in claim 1, wherein the one or more processors transmits an identification signal to one or more remotely located test cartridges that match the test selection such that the one or more remotely located test cartridges provide a visual or audible signal to a user upon receipt of the identification signal.

12. The POC device as recited in claim 1, wherein one or more processors generate the report based on an analysis of the test results data by:

transmitting the test results data to a remote device via the one or more communication interfaces, wherein the remote device generates the report based on the analysis of the test results data; and

receiving the report from the remote device via the one or more communication interfaces.

13. The POC device as recited in claim 1, wherein the one or more processors control the test cartridge via the test cartridge interface to process a sample within the test cartridge to extract the analyte from the sample.

14. The POC device as recited in claim 1, wherein the one or more processors provide a status of the test results data and the report generation to the user interface.

15. The POC device as recited in claim 1, further comprising:

a data storage communicably coupled to the one or more processors, wherein the data storage contains a database comprising one or more tables of genes, gene variants, drugs, gene-drug interaction scores, drug-drug interaction scores, RNA transcript-drug interaction scores, protein-drug interaction scores, metabolite-drug interaction scores, carbohydrate-drug interaction scores, lipid-drug interaction scores, chemical-drug interaction scores, cell-drug interaction scores, tissue-drug interaction scores, bacterium-drug interaction scores, fungus-drug interaction scores, and virus-drug interaction scores; and

wherein the one or more processors generate the report based on an analysis of the test results data and the database.

16. The POC device as recited in claim 15, wherein the database comprises a portion of a larger remotely located database that is accessible via the one or more communication interfaces.

17. The POC device as recited in claim 15, wherein the database is encrypted and copy protected.

18. The POC device as recited in claim 15, wherein the one or more processors check for an update to the database periodically or prior to generating the report.

19. The POC device as recited in claim 1, wherein the one or more processors download or access at least a portion of a remotely located database via the one or more communication interfaces.

20. The POC device as recited in claim 1, wherein the report includes a gene-based predicted outcome, a possible effect on a patient, a genotype result for the patient, a genotype interpretation summary, a potentially harmful drug interaction report, a substance potential interaction report, a gene mutation report, a clinical background data, or a combination thereof.

21. The POC device as recited in claim 1, wherein the one or more processors further transmit the report to an output device or a communications device via the one or more communication interfaces.

22. The POC device as recited in claim 1, wherein the one or more processors further receive a patient information or a patient clinical information via the user interface or the one or more communication interfaces.

23. The POC device as recited in claim 22, wherein the one or more processors link a test cartridge identification information to the patient information or the patient clinical information.

24. The POC device as recited in claim 1, further comprising:

one or more testing or analysis components disposed within the test cartridge, the test cartridge interface or the housing, wherein the one or more processors control the test cartridge via the test cartridge interface to load the sample or the analyte within the test cartridge into the one or more testing or analysis components such that the one or more testing or analysis components perform one or more tests on the sample or the analyte; and

wherein the one or more detectors or sensors are operably connected to the one or more testing or analysis components to detect the one or more properties of the sample or the analyte.

25. The POC device as recited in claim 24, further comprising one or more reservoirs, compartments, wells, channels, tubes, microfluidic pumps, nonfluidic pumps, pillars, inlets valves or outlet valves disposed within the test cartridge, the test cartridge interface or the housing for storing, moving, processing, testing or disposing of the sample, the analyte, one or more reagents, one or more immobilized capture molecules, one or more chemicals, one or more cleaning fluids, one or more waste materials or a combination thereof.

26. The POC device as recited in claim 24, wherein the one or more testing or analysis components incubate the sample or the analyte, heat the sample or the analyte, cool the sample or the analyte, separate the sample or the analyte, distribute the sample or the analyte, illuminate the sample or the analyte, pressurize the sample or the analyte, or a combination thereof.

27. The POC device as recited in claim 24, wherein the one or more testing or analysis components use one or more techniques selected from a group comprising microarrays or micro-versions of polymerase chain reaction (PCR), sequencing, ligand binding assays, Luminex, microscopy, imaging, flow cytometry, and mass spectrometry.

28. The POC device as recited in claim 1, further comprising a sample port disposed within, attached to or integrated into the housing, wherein the sample port is connected to the test cartridge interface such that the sample or analyte put into the sample port is transferred to the test cartridge connected to the test cartridge interface.

29. The POC device as recited in claim 28, wherein the sample port is connected to the test cartridge interface via one or more reservoirs, compartments, wells, channels, tubes, microfluidic pumps, nonfluidic pumps or pillars.

30. The POC device as recited in claim 28, wherein the sample port accepts the sample directly or via an adapter or collection device attached to the sample port.

31. The POC device as recited in claim 1, wherein the sample comprises blood, urine, saliva, cerebrospinal fluid,