

**19.** The diagnostic test system of claim **1**, wherein the testing apparatus is physically separate from the testing device, and wherein the testing device communicates with the testing apparatus via at least one of a wired connection or a wireless communication apparatus.

**20.** A method for detecting at least one analyte of interest in a sample, the method comprising:

providing a lateral-flow chromatographic assay cassette that includes: a capture ligand, at least one reporter substance for visualizing the interaction of the analyte of interest and the capture ligand, and means for providing an at least a two-point calibration curve for quantification of the at least one analyte of interest;

providing a testing device that includes data collection and data analysis capabilities the testing device including:

a testing apparatus configured to interface with the lateral-flow chromatographic assay cassette and position the lateral-flow chromatographic assay cassette in proximity to a light source;

the light source being capable of transmitting at least one wavelength of light configured to yield a detectable signal from the at least one reporter; and

a detector is positioned to capture the detectable signal from the at least one reporter;

applying a liquid sample to the lateral-flow chromatographic assay cassette, wherein the sample includes at least one analyte of interest;

inserting the lateral-flow chromatographic assay cassette into the testing apparatus;

illuminating the lateral-flow chromatographic assay cassette to yield a detectable signal from the at least one reporter substance; and

querying an interpretive algorithm stored in a computer readable format and electronically coupled to the handheld device, wherein the interpretive algorithm is configured for (i) calculating a calibration curve and the (ii) converting the detectable signal from the at least one reporter to a numerical value related to the presence or amount of the at least one analyte present in a sample.

**21.** The method of claim **20**, wherein the capture ligand includes at least one of an antibody, an epitope, or a nucleic acid immobilized on the lateral-flow chromatographic assay cassette.

**22.** The method of claim **20**, further comprising mixing the liquid sample with a dye conjugate prior to applying the sample to the lateral-flow chromatographic assay cassette, wherein the dye conjugate is configured to interact with at least one of the analyte of interest or the capture ligand to provide a visual readout related to the presence or concentration of the analyte of interest in the sample.

**23.** The method of claim **20**, wherein the detectable signal includes at least one of emission, color intensity, reflectance, diffuse scattering, elastic light scattering, transmission, fluorescence, surface plasmon detection, Rayleigh scattering, electrochemical detection, conductivity, or absorbance.

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