CLAIMS

1. A test apparatus comprising:

a test strip having a first end and an opposite second end;

a radio frequency identification (RFID) tag configured to store information associated with the test strip; and

a housing for the test strip, wherein the housing comprises:

a first section comprising an outer face and an inner face, wherein the inner face of the first section comprises a channel to receive the test strip along the length of the first section, and

a second section comprising an outer face and an inner face, wherein the second section is configured to be attached to the first section such that in an attached configuration the inner face of the first section faces the inner face of the second section, and the first and second sections together enclose the RFID tag and the test strip within the housing, wherein the second section comprises:

a buffer port configured to allow a buffer solution to be dispensed to a portion of the test strip proximate to a first end of the test strip,

a test window configured to facilitate imaging of one or both of a test location and a control location on the test strip,

a sample port disposed between the buffer port and the test window, the sample port configured to enable a sample of blood plasma to be dispensed to the test strip, and

a set of projections disposed on the inner face of the second section between the test window and the sample port such that in the attached configuration, each projection in the set of projections is in contact with the test strip, wherein

a height of at least one projection in the set of projections is different from a height of another

projection in the set of projections, and heights of the different projections are configured such that, in the attached configuration, the set of projections produces a pressure gradient that allows a fluid to flow at a predetermined flow rate along the length of the test strip between the first and last projections in the set of projections.

2. The test apparatus of claim 1, wherein the predetermined flow rate is such that the fluid flows from the portion of the test strip adjacent to the buffer port of the second section to the portion of the test strip adjacent to the test window of the second section in about 20 minutes.

3. The test apparatus of claim 1, wherein the set of projections is a set of ridges.

4. The test apparatus of claim 3, wherein distances between ridges are substantially equal.

5. The test apparatus of claim 3, wherein the set of projections includes four ridges, a first ridge being disposed closer to the sample port than the other ridges, a fourth ridge being disposed closer to the test window than the other ridges, and a second ridge and a third ridge being disposed between the first and fourth ridges.

6. The test apparatus of claim 1, wherein the first section includes multiple attachment projections that are configured to attach to corresponding attachment receptacles disposed on the second section, wherein dimensions of the attachment projections and attachment receptacles are configured such that in the attached configuration, the set of projections produces the pressure gradient that allows the fluid to flow at the predetermined flow rate along the length of the test strip.

7. A test system for ST2 cardiac biomarker, comprising:

a test strip configured to facilitate detection of a threshold level of ST2 in blood plasma;

a housing for the test strip, wherein the housing comprises:

a first section comprising an outer face and an inner face, wherein the inner face of the first section comprises a channel to receive the test strip along the length of the first section, and

a second section comprising an outer face and an inner face, wherein the second section is configured to be attached to the first section such that in an attached configuration the inner face of the first section faces the inner face of the second section, and the first and second sections together enclose the test strip within the housing, wherein the second section comprises:

a buffer port configured to allow a buffer solution to be dispensed to a portion of the test strip proximate to a first end of the test strip,

a test window configured to facilitate imaging of one or both of a test location and a control location on the test strip,

a sample port disposed between the buffer port and the test window, the sample port configured to enable a sample of blood plasma to be dispensed to the test strip, and

a set of projections disposed on the inner face of the second section between the test window and the sample port such that in the attached configuration, each projection in the set of projections is in contact with the test strip, wherein

a height of at least one projection in the set of projections is different from a height of another projection in the set of projections, and heights of the different projections are configured such that, in the attached configuration, the set of projections produces a pressure gradient that allows a fluid to flow at a predetermined flow rate along the length of the test strip

between the first and last projections in the set of projections;

an identification tag disposed on or within the housing, wherein the identification tag is configured to store information associated with the test strip; and

a reader device configured to accept at least a portion of the housing within the reader, the reader device comprising an optical system that images one or both of the test location and the control location on the test strip, and displays an estimated level of ST2 in the sample of blood plasma.

8. The test system of claim 7, wherein the reader device is configured to query the identification tag to obtain at least a portion of the stored information.

9. A test apparatus comprising:

a test strip having a first end and an opposite second end; and

a housing for the test strip, wherein the housing comprises:

a first section comprising an outer face and an inner face, wherein the inner face of the first section comprises a channel to receive the test strip along the length of the first section, and

a second section comprising an outer face and an inner face, wherein the second section is configured to be attached to the first section such that in an attached configuration the inner face of the first section faces the inner face of the second section, and the first and second sections together enclose the test strip within the housing, wherein the second section comprises:

a buffer port configured to allow a buffer solution to be dispensed to a portion of the test strip proximate to the first end of the test strip,

a test window configured to provide visualization of one or both of a test location and a control location on the test strip,

a sample port disposed between the buffer port and the test window, the sample port configured to enable a sample of whole blood to be dispensed to the test strip, and

a set of projections disposed on the inner face of the second section between the test window and the sample port such that in the attached configuration, each projection in the set of projections is in contact with the test strip, wherein

a height of at least one projection in the set of projections is different from a height of another projection in the set of projections, and heights of the different projections are configured such that, in the attached configuration, the set of projections produces a pressure gradient that allows a fluid to flow at a predetermined flow rate along the length of the test strip between the first and last projections in the set of projections.

10. The test apparatus of claim 9, wherein the predetermined flow rate is such that the fluid flows from the portion of the test strip adjacent to the buffer port of the second section to the portion of the test strip adjacent to the test window of the second section in about 15 minutes.

11. The test apparatus of claim 9, wherein the set of projections is a set of ridges.

12. The test apparatus of claim 11, wherein distances between ridges are substantially equal.

13. The test apparatus of claim 11, wherein the set of projections includes three ridges, a first ridge being disposed closer to the sample port than the other ridges, a third ridge being disposed closer to the test window than the other ridges, and a second ridge being disposed between the first and third ridges.

14. The test apparatus of claim 9, wherein the first section includes multiple attachment projections that are configured to attach to corresponding attachment receptacles disposed on the second section, wherein dimensions of the

attachment projections and attachment receptacles are configured such that in the attached configuration, the set of projections produces the pressure gradient that allows the fluid to flow at the predetermined flow rate along the length of the test strip.

15. The test apparatus of claim 9, wherein the inner face of the second section includes a second projection around the sample port, the second projection configured to inhibit a flow of components of the sample of whole blood along the length or width of the test strip.