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4-amino-1,1-azobenzene-3,4-disulfonic acid (0.4 M) in water then dried in a "dry box".

In assays using alkaline-phosphatase (from bovine intestine)-labeled reagents (APase coupled to haptens or to antibodies at concentrations of up to about 10 ug/mL in a dilute tris buffer) and either Lumigen's Lumiphos™ 530, or KPL Phosphoglow™ AP substrates (both are dioxetanes and have an esterified phosphate residue on which the enzyme acts) used as supplied by the vendors (100 uM in dioxetane), the result was about 200 uL of enzyme and 200 uL of substrate in the waste chamber, thus exposed to the adsorbent material.

After an initial glow rate of 38,550 counts/second (observed by placing the fluidic device in a Molecular Devices M5 luminometer such that the waste chamber was being interrogated), the intensity dropped to about 100 counts/second within a few seconds after adding the adsorbent material (the noise level of the luminometer was about 100 counts/second). In other words, more than 99% of the optical interference was eliminated.

The azobenzene acted in an inhibitory manner on both the enzyme and the substrate. The enzyme was inactivated by the acidity of the reagent, and likely by other mechanisms as well. The substrate was chemically modified by the azobenzene such that it is no longer a substrate for alkaline phosphatase.

While preferred embodiments of the present invention have been shown and described herein, it will be obvious to those skilled in the art that such embodiments are provided by way of example only. Numerous variations, changes, and substitutions will now occur to those skilled in the art without departing from the invention. It should be understood that various alternatives to the embodiments of the invention described herein may be employed in practicing the invention. It is intended that the following claims define the scope of the invention and that methods and structures within the scope of these claims and their equivalents be covered thereby.

What is claimed is:

1. A method of detecting an analyte in a sample, comprising:

- (a) allowing a sample suspected to contain the analyte to react with at least one reactant contained in a fluidic device, said device comprising:
  - (i) an assay assembly configured to yield an optical signal that is indicative of the presence of the analyte, said assay assembly comprising:
    - (1) a reagent chamber comprising at least one reagent used in said assay; and
    - (2) at least one reaction site comprising a reactant that binds said analyte, wherein said assay assembly is adapted to yield an optical signal indicative of the presence of the analyte in the sample, and wherein the at least one reagent reacts with a second reagent in said assay assembly to produce the optical signal; and
  - (ii) a quencher assembly in fluidic communication with but in a separate location from said assay assembly, wherein said quencher assembly comprises a quenching agent that inhibits an enzymatic reaction between the at least one reagent and the second reagent in said quencher assembly to reduce signals that interfere with the optical signals detected from said assay assembly; and
- (b) channeling unreacted reactants to said quencher assembly where interfering signals from said unreacted reactants are quenched with said quenching agent; and

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(c) detecting said optical signal thereby detecting the analyte in the sample.

2. The method of claim 1, wherein said at least one reagent comprises an enzyme conjugate or an enzyme substrate.

3. The method of claim 1, wherein said quenching agent is contained in a quenching site of the quencher assembly.

4. The method of claim 3, wherein said quencher assembly further comprises an absorbent material.

5. The method of claim 4, wherein said absorbent material is impregnated with said quenching agent.

6. The method of claim 4, wherein said absorbent material is selected from the group consisting of glass fiber, silica, paper, polyacrylamide gel, agarose, and agar.

7. The method of claim 4, wherein said quenching agent is a denaturing agent.

8. The method of claim 7, wherein said quenching agent is 4-amino-1,11-azobenzene-3,4,11-disulfonic acid.

9. The method of claim 1, wherein said assay assembly is adapted to run a chemiluminescent assay.

10. The method of claim 1, wherein said quencher assembly is adapted to substantially eliminate optical interference from unreacted reagent.

11. The method of claim 3, further comprising a waste chamber, wherein said waste chamber comprises said quenching site.

12. The method of claim 1, wherein said sample of bodily fluid is blood.

13. The method of claim 1, wherein the optical signal is a luminescent signal.

14. The method of claim 13, wherein the luminescent signal is a chemiluminescent signal.

15. A method of detecting an analyte in a sample, comprising:

- (a) allowing a sample suspected to contain the analyte to react with at least one reactant contained in a fluidic device, said device comprising:
  - (i) an assay assembly comprising at least one reaction site, said reaction site comprising a surface and immobilized thereon a reactant that forms a complex comprising the analyte;
  - (ii) a first reagent chamber comprising an enzyme conjugate;
  - (iii) a second reagent chamber comprising an enzyme substrate, wherein the enzyme substrate reacts with the enzyme conjugate to produce a chemiluminescent signal;
  - (iv) fluidic channels that connect the reagent chambers with the at least one reaction site;
  - (v) a quencher assembly at a separate location from the assay assembly, the quencher assembly comprising an absorbent material and a quenching agent, wherein the quenching agent inhibits the chemiluminescent reaction between the enzyme conjugate and the enzyme substrate to reduce signals that interfere with the chemiluminescent signal detected from said assay assembly; and
  - (vi) a plurality of fluidic channels that connect the sample collection unit and the quencher assembly with the assay assembly
- (b) channeling unreacted reactants to said quencher assembly where interfering signals from said unreacted reactants are quenched with said quenching agent;
- (c) detecting said chemiluminescent signal thereby detecting the analyte in the sample.

16. The method of claim 15, wherein said quencher assembly further comprises a waste chamber connected through a