

TABLE 4-continued

	Exemplary Analytes
Diabetes	C-Peptide, Hemoglobin A1c, Glycated albumin, Advanced glycosylation end products (AGEs), 1,5-anhydroglucitol, Gastric Inhibitory Polypeptide, Glucose, Hemoglobin, ANGPTL3 and 4
Inflammation	Rheumatoid factor (RF), Antinuclear Antibody (ANA), C-reactive protein (CRP), Clara Cell Protein (Uteroglobulin)
Allergy	Total IgE and Specific IgE
Autism	Ceruloplasmin, Metallothioneine, Zinc, Copper, B6, B12, Glutathione, Alkaline phosphatase, and activation of apo-alkaline phosphatase
Coagulation disorders	b-Thromboglobulin, Platelet factor 4, Von Willebrand factor
COX inhibitors	TxB2 (Cox-1), 6-keto-PGF-1-alpha (Cox 2), 11-Dehydro-TxB-1a (Cox-1)
Geriatric	Neuron-specific enolase, GFAP, and S100B
Nutritional status	Prealbumin, Albumin, Retinol-binding protein (RBP), Transferrin, Acylation-Stimulating Protein (ASP), Adiponectin, Agouti-Related Protein (AgRP), Angiopoietin-like Protein 4 (ANGPTL4, FIAF), C-peptide, AFABP (Adipocyte Fatty Acid Binding Protein, FABP4) Acylation-Stimulating Protein (ASP), EFABP (Epidermal Fatty Acid Binding Protein, FABP5), Glicentin, Glucagon, Glucagon-Like Peptide-1, Glucagon-Like Peptide-2, Ghrelin, Insulin, Leptin, Leptin Receptor, PYY, RELMs, Resistin, and sTfR (soluble Transferrin Receptor)
Lipid metabolism	Apo-lipoproteins (several), Apo-A1, Apo-B, Apo-C-II, Apo-D, Apo-E
Coagulation status	Factor I: Fibrinogen, Factor II: Prothrombin, Factor III: Tissue factor, Factor IV: Calcium, Factor V: Proaccelerin, Factor VI, Factor VII: Proconvertin, Factor VIII: Anti-hemolytic factor, Factor IX: Christmas factor, Factor X: Stuart-Prower factor, Factor XI: Plasma thromboplastin antecedent, Factor XII: Hageman factor, Factor XIII: Fibrin-stabilizing factor, Prekallikrein, High-molecular-weight kininogen, Protein C, Protein S, D-dimer, Tissue plasminogen activator, Plasminogen, a2-Antiplasmin, Plasminogen activator inhibitor 1 (PAI1).
Monoclonal antibodies	those for EGFR, ErbB2, and IGF1R
Tyrosine kinase inhibitors	Ab1, Kit, PDGFR, Src, ErbB2, ErbB 4, EGFR, EphB, VEGFR1-4, PDGFRb, FLT3, FGFR, PKC, Met, Tie2, RAF, and TrkA; VEGF
Serine/Threonine Kinase Inhibitors	AKT, Aurora A/B/B, CDK, CDK (pan), CDK1-2, VEGFR2, PDGFRb, CDK4/6, MEK1-2, mTOR, and PKC-beta
GPCR targets	Histamine Receptors, Serotonin Receptors, Angiotensin Receptors, Adrenoreceptors, Muscarinic Acetylcholine Receptors, GnRH Receptors, Dopamine Receptors, Prostaglandin Receptors, and ADP Receptors
Other	Theophylline, CRP, CKMB, PSA, Myoglobin, CA125, Progesterone, TxB2, 6-keto-PGF-1-alpha, and Theophylline, Estradiol, Lutenizing hormone, High sensitivity CRP, Triglycerides, Trypsin, Low density lipoprotein Cholesterol, High density lipoprotein Cholesterol, Cholesterol, IGF1R, Leptin, Leptin receptor, and Pro-calcitonin, Brain S100 protein, Substance P, 8-Iso-PGF-2a; GIP; GLP-1

What is claimed is:

1. A two-way communication system for detecting an analyte in a bodily fluid from a subject, comprising:

- a) a reader assembly comprising a programmable processor that is operably linked to a communication assembly;
- b) an external device configured to transmit a protocol to the communication assembly;
- c) a test device configured to be inserted into the reader assembly, said test device comprising:
 - i) a sample collection unit configured for collecting a sample of bodily fluid suspected to contain an analyte;
 - ii) an assay assembly containing reactants that react with said sample of bodily fluid based on the protocol transmitted from said external device to yield a detectable signal indicative of the presence and/or concentration of said analyte; and
 - iii) an identifier that is configured to provide the identity of said test device and is also configured to trigger the transmission of said protocol that is selected based on said identifier;

wherein the programmable processor of the reader assembly is configured to receive said protocol from said external device, wherein said protocol in turn effects (1) a reaction in said assay assembly for generating said signal, and (2) selection of a detection method for detecting said signal, and wherein said reader further comprises a

detection assembly for detecting said signal which is transmitted via said communication assembly to said external device.

2. The system of claim 1 wherein the reader assembly further comprises a controller having computer-executable commands for performing the reaction at a designated point-of-care location.

3. The system of claim 1 wherein the external device further comprises a means for receiving and aggregating a plurality of signals to effect trending of the presence and/or concentration of said analyte taken at various time points over a given period of time.

4. The system of claim 3 wherein the plurality of signals are transmitted concurrently with performance of said trending.

5. The system of claim 3 wherein the plurality of signals are transmitted prior to performance of said trending.

6. The system of claim 1 wherein the system is capable of performing on-board calibration of said assay assembly.

7. The system of claim 1 wherein the sample is collected from a puncture of the skin.

8. The system of claim 1 wherein the test device further comprises a microneedle useful for collecting the sample.

9. The system of claim 1 wherein the sample collection unit collects a sample of bodily fluid which is less than about 500 uL.

10. The system of claim 1 wherein the reader assembly is configured to receive said protocol wirelessly from said external device.