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(54) Title: SYSTEM FOR ELECTROCHEMICAL QUANTITATIVE ANALYSIS OF ANALYTES WITHIN A SOLID PHASE

(57) Abstract

The invention is directed to a system, method, and test strip for solid phase, electrochemical, quantitative analysis of analytes contained in biological fluid samples. A test sample can be applied to a sample collection pad. The test sample solution and a test kit reagent are then contacted and caused to migrate along a fluid pathway. A test kit reagent (e.g. labeled substance) and the analyte of interest (e.g. proteins, hormones or enzymes, polysaccharides, antibodies, nucleic acids, drugs, toxins, viruses, portions of a cell wall), either interact with one another to form a complex, or, alternatively, compete with one another for interaction with another test kit reagent, resulting in concentration of an indicator substance within a delimited area of the solid phase. The delimited area is subjected to electrochemical analysis and the results determined by monitoring an electrochemical transition in the form of an indicator, or derivative of the indicator by potentiostatic or potentiometric quantitative analysis (e.g. anodic stripping voltammetry). The electrochemical transition of the indicator has a characteristic electrical fingerprint that can be correlated with the concentration of the analyte in the sample.