



US 20060003336A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2006/0003336 A1**

**Song et al.**

(43) **Pub. Date:**

**Jan. 5, 2006**

(54) **ONE-STEP ENZYMATIC AND AMINE  
DETECTION TECHNIQUE**

(52) **U.S. Cl.** ..... **435/6; 435/7.92; 435/23**

(75) **Inventors:** **Xuedong Song**, Roswell, GA (US);  
**RameshBabu Boga**, Roswell, GA (US);  
**Chibueze Obi Chidebelu-Eze**, Atlanta,  
GA (US)

(57) **ABSTRACT**

Correspondence Address:  
**Dority & Manning, P.A.**  
**P.O. Box 1449**  
**Greenville, SC 29601 (US)**

A technique for detecting the presence or quantity of an enzyme (or enzyme inhibitor) and/or an amine within a test sample is provided. For example, in one embodiment, a diagnostic test kit is employed that utilizes reactive complexes that each includes a substrate joined (e.g., covalently bonded, physically adsorbed, etc.) to a reporter and a separation species. Upon contacting the reactive complexes, enzymes may cleave the substrate and release the reporter. Moreover, the test kit may also employ a chemichromic dye, i.e., a dye that exhibits a detectable color change upon chemical reaction with one or more functional groups, such as amino groups. The signal generated (directly or indirectly) by the reporter and chemichromic dye may then be used to indicate the presence or quantity of an enzyme (or enzyme inhibitor) and amine, respectively, within the test sample.

(73) **Assignee:** **Kimberly-Clark Worldwide, Inc.**

(21) **Appl. No.:** **10/881,010**

(22) **Filed:** **Jun. 30, 2004**

**Publication Classification**

(51) **Int. Cl.**  
**C12Q 1/68** (2006.01)  
**G01N 33/573** (2006.01)  
**G01N 33/53** (2006.01)