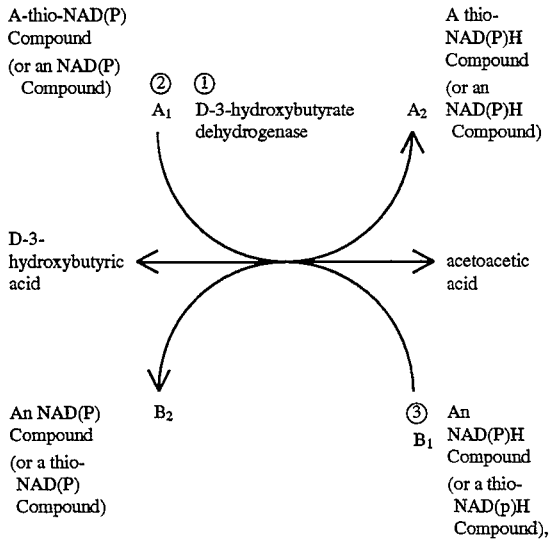
A_1 and (3) B_1, the components (1), (2) and (3) participating in the following cycling reaction:



thereby effecting the enzymatic cycling reaction, and measuring a change in the amount of A_2 formed or the amount of B_1 consumed. Also disclosed is an analytical reagent comprising the components (1), (2) and (3) for use in the above method. The method and the analytical reagent ensure rapidness and accuracy in the determination of D-3-hydroxybutyric acid and acetoacetic acid, even with the use of a small quantity of a biological sample, so that they are very useful in application fields, such as clinical diagnosis and food testing.

26 Claims, 4 Drawing Sheets