

11

- (2) converting both 3-hydroxybutyric acid originally existed in the sample and 3-hydroxybutyric acid converted by step (1) to acetoacetic acid with the aid of 3-hydroxybutyrate dehydrogenase and oxide-type nicotinamide adenine dinucleotide; and
- (3) measuring the absorbance of reduced-type nicotinamide adenine dinucleotide formed by step (2).
2. A method according to claim 1 wherein said another enzyme reaction is carried out using an enzyme selected from the group consisting of isocitrate dehydrogenase, alcohol dehydrogenase, glucose-6-phosphate dehydrogenase, aldehyde dehydrogenase and glucose dehydrogenase, and with its substrate.
3. A method according to claim 2 wherein said enzyme is isocitrate dehydrogenase, and said substrate is citric acid.
4. A method according to claim 1 wherein in step (2), an excess amount of oxydized-type nicotinamide adenine dinucleotide is added to the reaction system, and the pH of the system is shifted to an alkaline region to convert both

12

3-hydroxybutyric acid originally existed in the sample and 3-hydroxybutyric acid previously converted from acetoacetic acid to acetoacetic acid.

5. A kit of reagent for assaying the total ketone body comprising:

- (1) a buffering agent,
- (2) 3-hydroxybutyrate dehydrogenase,
- (3) reduced-type nicotinamide adenine dinucleotide,
- (4) oxidized-type nicotinamide adenine dinucleotide,
- (5) an enzyme capable of converting oxidized-nicotinamide adenine dinucleotide to reduced-type nicotinamide adenine dinucleotide with the conjugated reaction with 3-hydroxybutyrate dehydrogenase, and
- (6) a substrate of the enzyme of the above (5).

6. A kit of reagent according to claim 5 further comprising an inhibitor of the enzyme of (5).

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