

-continued

<210> SEQ ID NO 12  
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 <212> TYPE: DNA  
 <213> ORGANISM: Artificial  
 <220> FEATURE:  
 <223> OTHER INFORMATION: a sequence of AlexaFluor750 labeled DNA

<400> SEQUENCE: 12

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40

What is claimed is:

1. A method for electrochemically detecting an analyte comprising:

bringing a sample containing an analyte into contact with a working electrode on which trapping substance for trapping the analyte is immobilized to allow the analyte to be trapped on the working electrode by the trapping substance;

forming a complex containing the analyte trapped on the working electrode in the trapping process and a label binding substance in which a labeling substance and a binding substance for trapping the analyte are at least retained by a support composed of polypeptide; and electrochemically detecting the labeling substance present on the working electrode obtained by the complex formation process.

2. The method according to claim 1, wherein in the process of forming a complex, the label binding substance is brought into contact with the analyte trapped on the working electrode in the trapping process to form the complex.

3. The method according to claim 1, wherein a complex containing the analyte and a label binding substance in which a labeling substance and a binding substance which traps the analyte are at least retained on the support composed of polypeptide is formed by bringing a conjugate containing a support composed of polypeptide in which a binding substance which traps the analyte is at least retained and which has a site which binds to a labeling substance into contact with the analyte trapped on the working electrode in the trapping process and then binding a labeling substance to the conjugate bound to the analyte in the complex formation process.

4. The method according to claim 1, wherein the polypeptide is albumin or ferritin.

5. The method according to claim 1, wherein the polypeptide support in the label binding substance is linked to the labeling substance via a linker.

6. The method according to claim 1, wherein the labeling substance is a photochemically or electrochemically active substance.

7. A method for electrochemically detecting an analyte in an electrolytic solution comprising:

bringing a sample containing an analyte into contact with a working electrode on which trapping substance for trapping the analyte is immobilized to allow the analyte to be trapped on the working electrode by the trapping substance;

forming a complex containing the analyte trapped on the working electrode in the trapping process and a label binding substance in which a labeling substance is

retained via a modulator which generates an interaction with an electrolytic solution and a working electrode site except a site where the trapping substance are bound on a binding substance which binds to the analyte on the working electrode; and

electrochemically detecting the labeling substance present on the working electrode obtained in the complex formation process.

8. The method according to claim 7, wherein the electrolytic solution contains an aprotic solvent and the surface of the working electrode and the modulator exhibit hydrophilicity.

9. The method according to claim 7, wherein the modulator is DNA.

10. The method according to claim 7, wherein the electrolytic solution contains a protic solvent and the surface of the working electrode and the modulator exhibit hydrophobicity.

11. The method according to claim 7, wherein in the process of forming a complex, the analyte trapped on the working electrode in the trapping process is brought into contact with the label binding substance to form the complex on the working electrode.

12. The method according to claim 7, wherein the complex is formed on the working electrode by bringing a conjugate containing a first binding substance which binds to the analyte into contact with the analyte trapped on the working electrode in the trapping process and bringing the conjugate bound to the analyte into contact with a labeled form in which the labeling substance is bound to a second binding substance which binds to the conjugate via the modulator in the complex formation process.

13. The method according to claim 7, wherein the working electrode is washed to remove the label binding substance which is not bound to the analyte after the process of forming a complex.

14. The method according to claim 7, wherein the labeling substance is an electrochemically or photochemically active substance.

15. The method according to claim 7, wherein the label binding substance is a multivalent-labeled binding substance in which a plurality of labeling substances are attached to the binding substance via modulators.

16. The method according to claim 7, wherein the analyte is quantified based on the detection results obtained in the detecting process.

17. The method according to claim 7, wherein the analyte is a plurality of analytes.

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