23B), and the detection process (FIG. 23D) in the above method shown in FIG. 23. On the other hand, in the method for electrochemically detecting an analyte shown in FIG. 25, conjugates [a first conjugate **290***a* and a second conjugate **290***b*] are added to the analyte S in the labeling process [see the process of adding a conjugate (C-**1**) of FIG. **25**C]. In the process of adding a conjugate (C-**1**), the first conjugate **290***a* formed of a first binding substance **291***a* which binds to the analyte S and a second binding substance **291***b* is bound to the analyte S trapped by the trapping substance on the working electrode body **61** [see the process of adding the first conjugate (C-**1**-**1**) of FIG. **25**C]. Then, the second conjugate **290***b* which binds to the second binding substance **291***b* included in the first conjugate **290***a* is bound to the first conjugate **290***a* [see the process of adding the second conjugate (C-**1**-**2**) of FIG. **25**C]. Thereafter, a labeled form **290***c* in which the labeling substance **293** is immobilized on the second binding substance **291***b* via the modulator **292** is bound to the second conjugate **290***b* [see the process of adding a labeled form (C-**2**) of FIG. **25**C]. In the method shown in FIG. **25**, the first conjugate **290***a* and the labeled form **290***c* are bound to the second conjugate **290***b* via the same binding substance (the second binding substance **291***b*). However, the binding substance which binds to the second conjugate **290***b* in the first conjugate **290***a* may be mutually different from the binding substance which binds to the second conjugate **290***b* in the labeled form **290***c*.

2. Oxidation Reduction Current/Electrochemiluminescence Detection Method

[0253] Subsequently, the oxidation reduction current/electrochemiluminescence detection method will be explained.

[0254] Referring FIG. **26**, the oxidation reduction current/electrochemiluminescence detection method according to the present embodiment is largely different from the photoelectrochemical detection method in that a labeling substance which generates oxidation reduction current when a voltage is applied or a labeling substance which emits light when a voltage is applied is used as the labeling substance **393** in the labeling process [see FIG. **26**C], and a voltage is applied to the working electrode **60** and the light generated from the labeling substance **393** is detected in the detection process [see FIG. **26**D]. Therefore, the process of supplying a sample [see FIG. **26**A] and the process of trapping an analyte [see FIG. **26**B] are the same as those in the photoelectrochemical detection method. The detector **1** which is used in the method for electrochemically detecting an analyte according to the present embodiment does not include the light source **13** and includes a sensor for detecting light generated from the labeling substance. In the detection chip **20** to be used in the method for electrochemically detecting an analyte according to the present embodiment, the working electrode body **61** is composed of a conductive material.

[0255] In the labeling process, the user injects the label binding substance **390** into the detection chip **20** from the sample inlet **30***b* to allow the label binding substance **390** to be bound to the analyte S trapped by the trapping substance **281** on the working electrode body **61** [see the labeling process of FIG. **26**C]. In the labeling process, a complex containing the trapping substance **281**, the analyte S, and the label binding substance **390** is formed on the working electrode body **61**.

[0256] The label binding substance **390** is formed of the first binding substance **291** to be bound to the analyte S, the modulator **292**, and the labeling substance **393**. In the label binding substance **390**, the first binding substance **291** is linked to the labeling substance **393** via the modulator **292**.

[0257] The labeling substance **393** is a labeling substance which emits light when a voltage is applied.

[0258] Examples of the labeling substance which emits light when a voltage is applied include luminol, lucigenin, pyrene, diphenylanthracene, and rubrene.

[0259] The luminescence of the labeling substance can be enhanced, for example, by using luciferin derivatives such as firefly luciferin and dehydro luciferin, enhancers such as phenols such as phenylphenol and chlorophenol or naphthols.

[0260] In the method for electrochemically detecting an analyte according to the present embodiment, as the labeling substance **393**, a labeling substance which generates oxidation reduction current when a voltage is applied may be used in place of the labeling substance which emits light when a voltage is applied.

[0261] Examples of the labeling substance which generates oxidation reduction current when a voltage is applied include metal complexes containing metal which causes an electrically reversible oxidation-reduction reaction as a central metal. As the metal complexes, the same metal complexes described in the first embodiment can be used.

[0262] The first binding substance **291** and the modulator **292** are the same as those in the photoelectrochemical detection method.

[0263] Subsequently, the detection process is performed [see the detection process of FIG. **26**D].

[0264] In the detection process, the user first injects an electrolytic solution through the sample inlet **30***b* of the detection chip **20**. Thereafter, the user inserts the detection chip **20** into the chip insertion unit **11** of the detector **1** shown in FIG. **1**. Then, the user gives an instruction to start measuring to the detector **1**. Here, the electrode leads **71**, **72**, and **73** of the detection chip **20** inserted into the detector **1** are connected to the ammeter **14** and the power source **15**. Then, a voltage is applied to the working electrode **60** by the power source **15** of the detector **1**. Thus, the labeling substance **393** is excited to generate light. In the measurement of light based on the labeling substance **393**, a photon counter is used. In this case, the light can be indirectly detected by using an optical fiber electrode obtained by forming a transparent electrode at the distal end of an optical fiber in place of the electrode (see U.S. Pat. No. 5,776,672 and U.S. Pat. No. 5,972,692).

[0265] Thereafter, a light value digitally converted by the A/D converting unit **16** is input into the control unit **17**. Then, the control unit **17** estimates the amount of the analyte in the sample from the digitally converted current value based on a calibration curve indicating a relationship between a light value created in advance and the amount of the analyte. The control unit **17** creates a detection result screen for displaying the information on the estimated amount of the analyte on the display **12**. Thereafter, the detection result screen created by the control unit **17** is sent to the display **12** so as to be displayed on the display **12**.

[0266] In the method for electrochemically detecting an analyte according to the present embodiment, from the viewpoint of suppressing the generation of noises due to contaminants, the user may discharge a remaining liquid containing contaminants from the sample inlet **30***b* of the detection chip **20** after the process of trapping an analyte and wash an inside of the detection chip **20**. In the washing of the inside of the detection chip **20**, organic solvents such as a buffer (particu-