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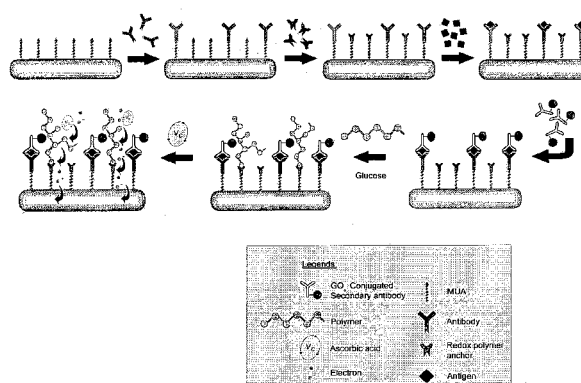


Figure 1.

(57) **Abstract:** The invention provides a highly sensitive immunoassay for detection of a biological species. The immunoassay comprises exposing an electrode to an analyte liquid putatively containing the biological species so as to couple the biological species, if present in the analyte liquid, to a binding antibody on the electrode. The electrode comprises a binding antibody and an anchor group, each being coupled to an electrically conductive substrate, said binding antibody being capable of binding to the biological species and said anchor group being capable of binding to a redox polymer. The electrode is then exposed to an antibody-enzyme liquid comprising an antibody-enzyme species, said antibody-enzyme species comprising a detection antibody capable of binding to the biological species, said detection antibody being coupled to a redox enzyme, whereby, if the analyte liquid comprises the biological species, the redox enzyme couples to the electrode by means of the coupling of both the detection antibody and the binding antibody to the biological species. The electrode is then exposed to a polymer solution comprising the redox polymer and to an enzyme substrate, whereby if the redox enzyme is coupled to the anchor group on the electrode the redox polymer is reduced and couples to the anchor group on the electrode. A voltage is then applied between the electrode and a reference electrode and the electrode is exposed to an oxidisable species, whereby a magnitude of an electric current between said electrode and a reference electrode is indicative of the presence or absence of the biological species.