METHOD FOR DETECTING BIOMOLECULES AND USE THEREOF

ABSTRACT

Biomolecule-specific probe is immobilized on an electrode surface to form a modified electrode. The modified electrode is exposed to target biomolecule. The biomolecule is captured by the probe whereby a first complex with the biomolecule is formed. Subsequently, the biomolecule is exposed to electroactive label having binding affinity to the biomolecule. The biomolecule adsorbs the electroactive label to the modified electrode to form a working electrode whereby a second complex comprising the first complex with the biomolecule and the bound electroactive label is formed. The working electrode is placed in an electrolyte medium and electrochemical measurement between the working electrode and a reference electrode is taken wherein the electrochemical measurement comprises the measurement of electrical signal resulting from a solid-state electrochemical process involving the electroactive labels. The magnitude of the electrochemical measurement corresponds to the concentration of the biomolecule present in the sample.

FIGURE 1