

4. The electrochemical-based analytical test strip of claim 1, wherein the at least one metal electrode is a gold metal electrode.

5. The electrochemical-based analytical test strip of claim 1, wherein the enzymatic reagent layer includes a glucose specific enzyme.

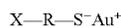
6. An electrochemical-based analytical test strip comprising:

an electrically-insulating substrate;

at least one gold electrode disposed on a surface of the electrically-insulating substrate, the gold metal electrode having:

an upper surface with hydrophilicity-enhancing chemical moieties thereon, and

an enzymatic reagent layer disposed on the treated upper surface, wherein the upper surface with hydrophilicity-enhancing moieties thereon is represented by:



where:

X is either a polar side group, a positively charged side group, or negatively charged side group;

R is a carbon chain;

SH is a thiol group;

and

Au is atomic gold.

7. The electrochemical-based analytical test strip of claim 6, wherein R is a carbon chain with a length in the range of C₁ to C₅.

8. The electrochemical-based analytical test strip of claim 6, wherein X is an amine group.

9. The electrochemical-based analytical test strip of claim 6, wherein X is a carboxy group.

10. The electrochemical-based analytical test strip of claim 6, wherein X is a sulphonate group.

11. The electrochemical-based analytical test strip of claim 6, wherein the enzymatic reagent layer includes a glucose specific enzyme.

12. The electrochemical-based analytical test strip of claim 1, wherein the hydrophilicity-enhancing moieties include a disulphide group.

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