

Quantitative SERRS immunoassay for the detection of human PSA

Ross Stevenson, Andrew Ingram, Donald C McMillan and Duncan Graham

Comparison of ratio gold:ABTS and quenching analysis

For analysis, 4ng of streptavidin HRP was added to the necessary wells in a 96-well plate before addition of 100 μ l ABTS. The reaction was followed for 30 minutes, upon completion the reaction was either quenched with 1% SDS before the addition to gold, or an unquenched sample was added directly to gold. All reactions were carried out in a total volume 300 μ l and the ratio of gold colloid:ABTS was varied for optimal results.

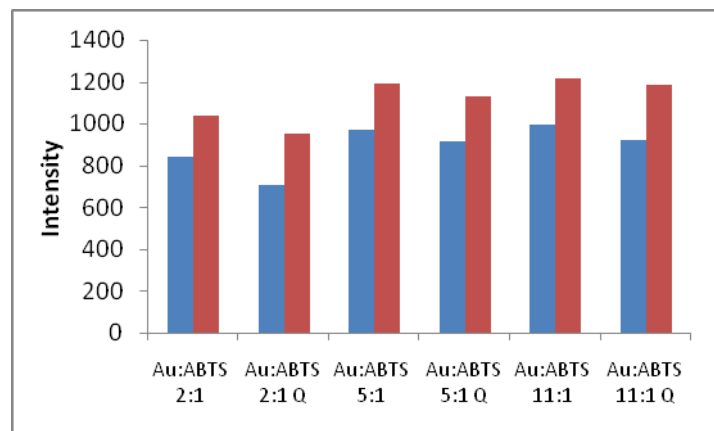


Figure S1. Red bars indicate peak maxima at 1405 cm^{-1} , blue 1442 cm^{-1} . The quenched (Q) and unquenched are shown, quenching appears to have little effect on the SERRS analysis of ABTS

pH analysis

The pH was varied between 3.5 and 6.5 to find the optimal to carry out the experiment. Results are shown in Figure S2. 100 μ l of ABTS was incubated with HRP (4ng) for 30minutes. The ABTS was immediately added to 200 μ l gold solution and the SERRS was obtained at 514,5nm.

To obtain the maximum possible signal a pH between 4.5 and 5.0 should be used but the data suggests that the pH can be varied between 3.5 to 5.5.

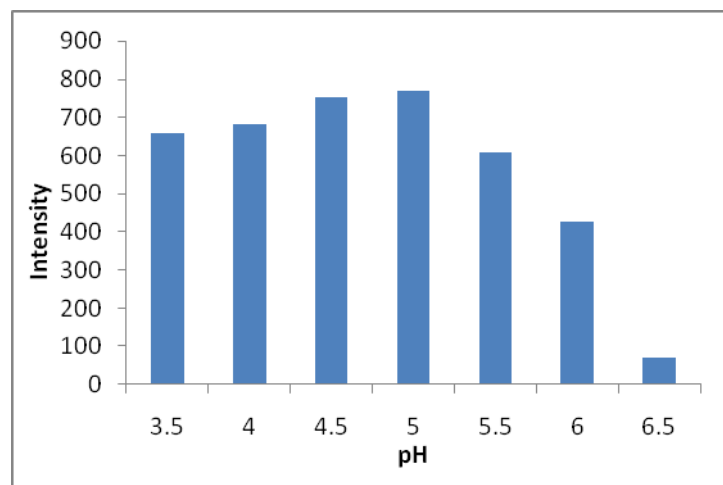


Figure S2. pH analysis of the ABTS SERRS.