Colloidal Gold

1) Clean Gold Glassware---soap, ddH20.

2) Make Gold Chloride sol'n (250 ml beaker).
   A. Add 0.5 ml 1% HAuCl4 to 39.5 ml ddH20.

3) Make Reducing Mixture.
   B. See Slot article for different sizes of gold.
      Ex// For 3nM gold:
      Combine 2.5 ml 1% Tannic Acid to 2.5 ml 25 mM K2CO3 in ddH20
      (34.55 mg/10 ml) and 2 ml 1% tri-Na-citrate.2H2O in ddH20 and 3 ml ddH20.
      (to make 1% solution, ex// put one gram pure powder into 100 ml ddH2O)

4) Heat A and B to 60oC in water bath.

5) Add quickly the reducing mixture (B) to HAuCl4 (A) so while the sol'n is stirring, it turns
   ~ immediately red.

6) Heat until boiling; Allow to boil for 10 min; Allow to cool down to RT.

7) Check pH w/ pH paper when pA gold is ready to be made, adjust to pH 5-6.

8) Perform Horrisberger Test.
   A. In small test tubes (6), add 250 ul samples of gold sol'n (pour aliquot out!)
      (adjusted to pH ~6) to 50 ul of serially diluted protein sol'n:
      i.e. +,1:20,1:30,1:40,1:50, -
      generally need ~ 1:40 dil. pA).
      + Control = 250 ul gold
      (no pA) 50 ul NaCl
                50 ul ddH20
      - Control = 250 ul gold
      (no NaCl) 50 ul pA
                50 ul H2O
   B. After 1 min add 25 ul 10% NaCl to EA tube.
   C. Examine and determine the lowest protein concentration that prevents the red to
      blue color change --- this = stabilization concentration and gold # value can be calculated
      from it.