

### Day 3: 09/10/19

#### Exploration of Methionine and Phenylalanine; Results for Basic Solutions

Observations from previous days' solutions:

- Both the 1.18mM and 0.59mM Trp solutions crashed out after 6 days suggesting that there is a problem outside of the concentration itself in terms of time/or time sensitivity

New ideas:

- Stronger base created: 1M NaOH stock
- Create solutions of cysteine and tryptophan at  $\frac{1}{2}$  the initial concentration of Gold (III) Chloride.
- Then add a certain amount of base to increase the stabilizing effect of the amino acids (more deprotonated groups to balance the nanoparticles)

Compound	Concentration Gold Solution	Amino Acid Added	Base added (1M NaOH)	Final pH
Trp	0.59mM	0.13mg	3 drops	4.214
Cys	0.59mM	0.12mg	2 drops	2.46

For UV vis, dilutions were made by a factor of 8 (1:8) due to supersaturated concentrations in UV vis. Below is first the solution of Trp and its progressive dilutions followed by Cys and its dilutions (shown from left to right).

