

10/18/17

Tasklist:

- Set up clay exchanges
 - Set up TiO₂ supports
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➤ Clay Exchanges

-Step 1: Measure 1.0g of NaMT and 155mg of Histidine. Add both to a 50mL falcon tube. Add about 50mL of DI water to the tube.

-Step 2: Repeat step 1 three times replacing the Histidine each time with 174mg of Arginine, 159mg of Lysozyme, and 204mg of Tryptophan respectively.

-Step 3: Leave the four prepared solutions to be shaken overnight.

➤ TiO₂ Supports

-Step 1: Dilute 10mM HAuCl₄ to 4mM HAuCl₄

Calculation

$$M_1V_1=M_2V_2$$

$$(10\text{mM})(V_1) = (4\text{mM})(25\text{mL})$$

$$(V_1) = 0.01 \text{ L} = \mathbf{10\text{mL}}$$

-Step 2: Add 0.25g of TiO₂ and 25mL of the 4mM HAuCl₄ into a small beaker.

-Step 3: Heat the solution for 15 minutes at 80 degrees C.

-Step 4: Filter the particles, rinse the solution with DI water, and place the sample into a clean porcelain crucible.

-Step 5: Heat the solution to 300 degrees C in a muffle furnace for two hours.