

09\_12 Notebook

-Prepared 0.1M buffer solutions of pH 10, 11, & 12

NaOH added	pH	NaOH added	pH	NaOH added	pH
Water started = 150		Water started = 150		Water started = 150	
0	8.33	0	8.228	0	8.221
0.5	8.631	9	9.873	15	10.315
1	8.835	18	10.537	25	11.741
2	9.092	21	10.859	27	12.237
3	9.269	22	11.001	water = 73 ml	12.137
4	9.422	water = 78ml	11.03		
5.5	9.585				
7.5	9.762				
9.5	9.915				
10.5	9.991				
water added = 90.5	10.03				

-Made 10mM HAuCl<sub>4</sub> solution and 100mM AA solutions

-10mM Au=  $10 \times 10^{-3}$  M Au:

$[(10 \times 10^{-3} \text{ M HAuCl}_4)(0.025\text{L})]/(0.015\text{L}) = \text{need to make } 0.016\text{M HAuCl}_4 \text{ stock}$

$(339.79 \text{ g/mol})(0.016 \text{ mol/L}) = (5.436 \text{ g/L})(0.100\text{L}) = 0.5436 \text{ g in } 0.100 \text{ L and add } 0.015625\text{L in } 0.025 \text{ L H}_2\text{O}$

-100mM Arginine=  $1 \times 10^{-5}$  M Arginine:

$[(1 \times 10^{-5} \text{ M Arginine})(0.010\text{L})]/(2.5 \times 10^{-4}) = 0.0004\text{mL} = 400\mu\text{L Arginine stock in } 0.010\text{L H}_2\text{O}$

-Prepared AuNP solutions using 10:1, 1:1, & 1:10 Au:AA (see table)

ph	10	11	12
Solutions Made for Each pH	Au: $2.5 \times 10^{-4}$ Arg (1:1:8)		
	Au: $2.5 \times 10^{-4}$ Phe (1:1:8)		
	Au: $2.5 \times 10^{-4}$ Ile (1:1:8)		
	10mM Au: 100mM Arg (1:0.01:9)		
	10mM Au: 100mM Arg (1:0.1:8.9)		
	10mM Au: 100mM Arg (1:1:8)		

-Prepared Buffer for Bradford Analysis: 1L 50mM Tris 50mM NaCl pH

**-NaCl:**

$$(50 \cdot 10^{-3} \text{ mol/L}) \cdot (58.44 \text{ g/mol}) \cdot (0.100 \text{ L}) = 2.922 \text{ g NaCl}$$

**-Tris:**

$$(50 \cdot 10^{-3} \text{ mol/L}) \cdot (121.14 \text{ g/mol}) \cdot (0.100 \text{ L}) = 6.057 \text{ g Tris}$$

-Added 0.025mL HCl to bring pH to 7.575

-Prepared Buffer for Dialysis: 100mL Glycine Buffer with pH= 3.5

HCl added	pH
0	5.594
0.1	4.333
0.15	4.215
0.2	4.122
0.25	4.055
0.35	3.936
0.45	3.85
0.55	3.776
0.65	3.652
0.75	3.6
0.85	3.555
0.95	3.509

-Prepare Buffer for SDS-PAGE  
used instructions on task list