

# Biol-311L

Lab#1: Solutions for Cell Biology

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## Group 1: Solutions for the lab

Make 100ml of each:

5M NaCl = \_\_\_\_\_ g/100ml

1M CaCl = \_\_\_\_\_ g/100ml

1M MgSO<sub>4</sub> = \_\_\_\_\_ g/100ml

1M KCl = \_\_\_\_\_ g/100ml

1M KH<sub>2</sub>PO<sub>4</sub>, pH 6.0 (to make: 13.6 g KH<sub>2</sub>PO<sub>4</sub> in 90 ml H<sub>2</sub>O, adjust pH to 6.0 with concentrated KOH, add water to 100ml)

10X TBE: 54 g Tris Base, 28 g Boric acid, 4.2 g EDTA in 400mL. Titrate pH to 8-8.5 with concentrated hydrochloric acid, fill to 500mL.

	Formula Weights:	M of 10X	mM of 1X
Tris	_____	_____	_____
Boric Acid	_____	_____	_____
EDTA	_____	_____	_____

20% Lactose FW= 340 \_\_\_\_\_ g/100ml = \_\_\_\_\_ mM

(% is dry weight/volume in biology. One must know formula weight to calculate molarity. Sterile filter.)

## **Group 2: Solutions for each group.**

1M Tris = \_\_\_\_\_ g/100ml  
Titrate to pH 8.0 with conc. HCl (make 100 ml of this for each group)

20% Glucose FW = 180 \_\_\_\_\_ g/100ml = \_\_\_\_\_ mM  
(% is dry weight/volume in biology. Formula weight is needed to calculate molarity. Sterile filter.)

200mg/ml Ampicillin = \_\_\_\_\_ g/15ml  
(Make a total of 15ml, aliquot 15X1ml. Each group gets a few 1ml aliquots)

10X Phosphate-buffered saline (usually called PBS, make **100ml** of this for each group, **adjust** this recipe as it is for **1L**)

1. Dissolve 80g of NaCl, 2.0g of KCl, 14.4g of Na<sub>2</sub>PO<sub>4</sub>, and 2.4g of KH<sub>2</sub>PO<sub>4</sub> in 800 ml dH<sub>2</sub>O.
2. Adjust pH to 7.4 with NaOH.
3. Adjust volume to **1L** with additional distilled H<sub>2</sub>O.
4. Sterilize by autoclaving.

Sterile distilled water: Make a few flasks for each group

### **Group 3: Media for the whole class**

#### **Nematode Growth Media plates (also called NGM, recipe for 1L)**

3g	NaCl
2.5g	Tryptone Peptone
20g	Agar

Sterilize by autoclaving. Allow to cool to ~50°C (still hot, but cool enough to hold). Add:

1ml	1M MgSO <sub>4</sub>
1ml	1M CaCl <sub>2</sub>
1ml	5mg/ml cholesterol
25 ml	1M KH <sub>2</sub> PO <sub>4</sub> , pH 6.0

Pour plates.

#### **Bacterial Feeding RNAi plates (also called M9-lactose plates, per liter):**

Na <sub>2</sub> HPO <sub>4</sub>	6 grams
KH <sub>2</sub> PO <sub>4</sub>	3 grams
NaCl	0.5 grams
NH <sub>4</sub> Cl	1 gram
Casamino acids	5 grams
Agar	20 grams

Autoclave, then add CaCl<sub>2</sub> and cholesterol as in NGM. Add ampicillin to 200µg/mL, and lactose to 0.2%. Pour plates

#### **Luria Broth Ampicillin plates (recipe for 1L)**

NaCl	5g
Tryptone Peptone	10g
Yeast Extract	5g
Agar	18g

Sterilize, cool, add ampicillin to 200 µg/ml and pour plates