

## Receipe for the brain slices cutting solution

<b>1 x cuttiing ASCF (Nusser)</b>			
<b>Prep (Nusser):</b>	<b>mM</b>	<b>MW</b>	<b>g/1 L</b>
NaCl	85	58.4	4.9675
Sucrose	75	342.3	25.6225
KCl	2.5	74.6	0.1865
Glucose	25	180.2	4.504
NaH <sub>2</sub> PO <sub>4</sub>	1.25	120	0.15
MgCl <sub>2</sub>	4	203.3	0.813
CaCl <sub>2</sub>	0.5	147	0.0735
NaHCO <sub>3</sub>	24	84.1	2.0185

### To make 5x stock souldion:

	<b>g/1 L (5 x Stock)</b>	
<b>NaCl</b>		<b>24.82</b>
<b>Sucrose</b>		<b>128.36</b>
<b>KCl</b>		<b>0.93</b>
<b>Glucose</b>		<b>22.53</b>
<b>NaH<sub>2</sub>PO<sub>4</sub> - H<sub>2</sub>O</b>		<b>0.86</b>
<b>1 M solution MgCl<sub>2</sub></b>	<b>20 ml</b>	
<b>0.5 M solution CaCl<sub>2</sub></b>	<b>5 ml</b>	
<b>NaHCO<sub>3</sub></b>		<b>10.09</b>

**We will make 5x stock solution, store it in the 4 deg fridge, and make 1x diluted souldion from it**

**100 ml 5x stock solution (using 100 ml volumetric flask to measure the volume)**

**+**

**400 ml double distilled water (use some of the water to rinse the 100 ml volumetric flask 2-3 times)**

**Add both into a 500 ml volumetric flask (with a plastic pipette) to get an exact meausre of 500 ml**

**Orginal recipe from the Soltesz lab at UCI**

## Xu lab protocol and instructions

### Receipe for the brain slices cutting solution

#### Ingredients for 5x stock solution for 1 Liter:

NaCl	24.82 g
Sucrose	128.36 g
KCl	0.93 g
Glucose	22.53 g
NaH <sub>2</sub> PO <sub>4</sub> - H <sub>2</sub> O	0.86 g
1M solution MgCl <sub>2</sub>	20 ml
0.5M solution CaCl <sub>2</sub>	5 ml
NaHCO <sub>3</sub>	10.09 g

- 1) Add 700~800mL ddH<sub>2</sub>O into a 1000mL beaker
- 2) Add clean stir bar into beaker & place beaker on stir plate
- 3) Turn on stirring (300~600 rpm); **DO NOT turn on heat**
- 4) Place weighing boat/paper on scale and measure directed amount of an ingredient with spatula [For small amount, please use the fine scale; for anything significantly more than 1 gram, please use the flat top scale]
- 5) Add ingredient into beaker and allow time to dissolve
- 6) Use another clean weighing boat/paper and spatula to measure next ingredient, add it into beaker, and so on
- 7) Get the 5 ml mechanical pipette and use 5 mL pipette tips to extract MgCl<sub>2</sub> and CaCl<sub>2</sub> solutions

**\*Add ingredients IN ORDER to prevent solution becoming murky (undesired reactions)**

**\*Make sure to add NaHCO<sub>3</sub> last!**

- 8) Wait until all ingredients are dissolved, then pour solution into a 1000mL volumetric flask and fill solution up to the 1000mL mark with ddH<sub>2</sub>O (use pipette tip when close to mark)
- 9) Put stopper on flask & shake/mix solution until it's homogenous
- 10) Pour solution into a 1000mL bottle and label it with '5x cutting solution', your initials, and date (use colored tape)
- 11) Store bottle in 4 degrees fridge, clean up area

## Xu lab protocol and instructions

### 1x cutting solution for 0.5 Liter:

- 1) Use 100mL volumetric flask to measure 100mL of 5x stock cutting solution
- 2) Add 100mL stock solution into a 500mL volumetric flask
- 3) Rinse 100mL flask with ddH<sub>2</sub>O and then add it into the 500mL flask (repeat 2~3 times)
- 4) Fill solution up to the 500mL mark with ddH<sub>2</sub>O (use pipette tip when close to mark)
- 5) Put stopper on flask & shake/mix solution until it's homogenous
- 6) Pour solution into a 500mL bottle and label it with '1x cutting solution', your initials, and date (use colored tape)
- 7) Store bottle in 4 degrees fridge, clean up area

### Final 1x cutting components:

<b>1 x cutting ASCF (Nusser)</b>			
<b>Prep (Nusser):</b>	<b>mM</b>	<b>MW</b>	<b>g/1 L</b>
NaCl	85	58.4	4.9675
Sucrose	75	342.3	25.6225
KCl	2.5	74.6	0.1865
Glucose	25	180.2	4.504
NaH <sub>2</sub> PO <sub>4</sub>	1.25	120	0.15
MgCl <sub>2</sub>	4	203.3	0.813
CaCl <sub>2</sub>	0.5	147	0.0735
NaHCO <sub>3</sub>	24	84.1	2.0185

## **Xu lab protocol and instructions**