

These solutions are modified from the lab's standard solutions to reflect solutions used in Ma et al. (Ma W, Berg J, Yellen G; JNeurosci 27:3618-3625).

Italicized ingredients reflect differences between lab standard & Ma et al.

<b>Ma Bicarbonate Stock (10X)</b>			
<b>Owner:</b>			
<b>Date Made:</b>			
<b>Final Volume: 2 L</b>			
<b>Ingredient</b>	<b>mM</b>	<b>MW</b>	<b>Grams</b>
<i>NaHCO<sub>3</sub></i> (sodium bicarbonate)	25	84.01	42.0
non-toxic			

<b>Ma ACSF (10X, minus bicarbonate)</b>			
<b>Owner:</b>			
<b>Date Made:</b>			
<b>Final Volume: 2 L</b>			
<b>Ingredient</b>	<b>mM</b>	<b>MW</b>	<b>Grams</b>
KCl (potassium chloride)	2.5	74.56	3.728
<i>Glucose</i>	12	180.2	43.2
NaH <sub>2</sub> PO <sub>4</sub> • H <sub>2</sub> O (sodium phosphate)	1.25	137.99	3.45
<i>MgCl<sub>2</sub> • 6H<sub>2</sub>O</i> (magnesium chloride )	1	203.30	4.07
CaCl <sub>2</sub> • 2H <sub>2</sub> O (calcium chloride )	2	147.02	5.882
NaCl	121.5	58.44	142
non-toxic			

<b>Ma ACSF (10X, minus bicarbonate)</b>			
<b>Owner:</b>			
<b>Date Made:</b>			
<b>Final Volume: 1 L</b>			
<b>Ingredient</b>	<b>mM</b>	<b>MW</b>	<b>Grams</b>
<b>KCl</b> <b>(potassium chloride)</b>	<b>2.5</b>	<b>74.56</b>	<b>1.864</b>
<b>Glucose</b>	<b>12</b>	<b>180.2</b>	<b>21.6</b>
<b>NaH<sub>2</sub>PO<sub>4</sub> • H<sub>2</sub>O</b> <b>(sodium phosphate)</b>	<b>1.25</b>	<b>137.99</b>	<b>1.725</b>
<b>MgCl<sub>2</sub> • 6H<sub>2</sub>O</b> <b>(magnesium chloride )</b>	<b>1</b>	<b>203.30</b>	<b>2.035</b>
<b>CaCl<sub>2</sub> • 2H<sub>2</sub>O</b> <b>(calcium chloride )</b>	<b>2</b>	<b>147.02</b>	<b>2.941</b>
<b>NaCl</b>	<b>121.5</b>	<b>58.44</b>	<b>71</b>
<b>non-toxic</b>			

On day of recording, make 1X solution. Then:

(1) Control Solution, Add 2mM NaCl

a. 1L: 117mg

b. 2L: 234mg

(2) BHB Solution, add 2mM NaOH & 2mM