Recipes for making recording stock solutions

Two stock solutions: 10x normal Ringer's and 10x bicarbonate stock

To make 10 x modified Ringer's Stock for 0.5 liter:

KCl	0.93	(in grams)
Glucose	9.01	
NaCl	36.82	
NaH_2PO_4 - H_2O	0.86	
1 M solution $MgCl_2$	10 mL	
0.5 M solution $CaCl_2$	20 mL	

To make 10 x Bicarbonate Stock for 0.5 liter:

$NaHCO_3$	10.92	(in grams)

To make 1x recording ACSF of 0.5 Liters

Use a 100ml cylinder to measure 50 ml 10x modified Ringer's stock, add it into a 500 ml volumetric flask

Then rinse the cylinder and add about 300 ml double distilled water

(to dilute Mg++ and Ca++ concentration before adding bicarbonate)

Next, add 50 ml 10x Bicarbonate stock solution

Finally, add enough water to get an exact volume of 500 ml

1x modified Ringer's

2.5 mM	KCl
10 mM	Glucose
126 mM	NaCl
1.25 mM	NaH_2PO_4 - H_2O
2 mM	$MgCl_2$ - $6H_2O$
2 mM	$CaCl_2$ - $2H_2O$
26 mM	$NaHCO_3$

Orginal recipe from the Soltesz lab at UCI

Making Recording Stock Solutions

Stock solutions: 10x normal Ringer's and 10x Bicarbonate

10x modified Ringer's Stock for 0.5 Liter:

KCl	0.93 g
Glucose	9.01 g
NaCl	36.82 g
NaH_2PO_4 - H_2O	0.86 g
1M solution $MgCl_2$	10 mL
0.5M solution $CaCl_2$	20 mL

1) Add 300~400mL ddH_2O into a 500mL 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 $MgCl_2$ and $CaCl_2$ solutions
***Add ingredients IN ORDER to prevent solution becoming murky (undesired reactions)**
8) Wait until all ingredients are dissolved, then pour solution into a 500mL volumetric flask and fill solution up to the 500mL mark with ddH_2O (use pipette tip to add water when close to mark)
9) Put stopper on flask & shake/mix solution until it's homogenous
10) Pour solution into a 500mL bottle and label it with '10x Ringer's', your initials, and date (use colored tape)
11) Store bottle in 4 degrees fridge, clean up area

Xu lab protocol and instructions

10x Bicarbonate stock for 0.5 Liter:

$NaHCO_3$	10.92 g

1) Add ~400mL ddH_2O into a 500mL 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 10.92 g of $NaHCO_3$ with spatula
5) Add $NaHCO_3$ into beaker and allow time to dissolve
6) Pour solution into a 500mL volumetric flask and fill solution up to the 500mL mark with ddH_2O (use pipette tip to add water when close to mark)
7) Put stopper on flask & shake/mix solution until it's homogenous
8) Pour solution into a 500mL bottle and label it with '10x Bicarbonate', your initials, and date (use colored tape)
9) Store bottle in 4 degrees fridge, clean up area

1x recording ACSF for 0.5 Liter:

1) Use a 100mL graduated cylinder to measure 50mL of 10x Ringer's stock
2) Add 50mL Ringer's stock into a 500mL volumetric flask
3) Rinse cylinder by filling it with ddH_2O and then adding it into the volumetric flask (add ~300mL ddH_2O this way)

***This dilutes Mg2+ and Ca2+ concentrations in solution so they won't react**

4) Measure 50mL of 10x Bicarbonate stock in graduated cylinder and add it into the flask
5) Fill solution up to the 500mL mark with ddH_2O (use pipette tip to add water when close to mark)
6) Put stopper on flask & shake/mix solution until it's homogenous
7) Pour solution into a 500mL bottle and label it with '1x recording', your initials, and date (use colored tape)
8) Store bottle in 4 degrees fridge, clean up area