

**Table S1: Recipe for MP Medium**

MP Media Recipe			FOR STOCK SOLUTIONS:		FOR 1 L MEDIA:	
		Molecular Weight (g)	CONCENTRATION	ADD TO 1 L dH <sub>2</sub> O	FINAL CONCENTRATION	ADD
<b>PIPES</b>	C <sub>8</sub> H <sub>8</sub> N <sub>2</sub> O <sub>6</sub> S <sub>2</sub>	302.37	300 mM (10X)	90.711 g	30 mM	100 mL
<b>P solution</b>	K <sub>2</sub> HPO <sub>4</sub> • 3 H <sub>2</sub> O	228.22	(100X) 145.0 mM	33.1 g	1.45 mM	10 mL
	NaH <sub>2</sub> PO <sub>4</sub> • H <sub>2</sub> O	137.99	187.69 mM	25.9 g	1.88 mM	
<b>MgCl<sub>2</sub></b>	MgCl <sub>2</sub> • 6 H <sub>2</sub> O	203.3	2 M (4000X)	406.6 g	0.5 mM	250 µL
<b>(NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub></b>	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	132.14	2 M (250X)	264.28 g	8 mM	4 mL
<b>CaCl<sub>2</sub></b>	CaCl <sub>2</sub> • 2 H <sub>2</sub> O	147.02	2 M (100,000X)	294.04 g	20 µM	10 µL
<b>C7-Metals</b> MIX IN ORDER LISTED ↓	sodium citrate (Na <sub>3</sub> C <sub>6</sub> H <sub>5</sub> O <sub>7</sub> • 2 H <sub>2</sub> O)	294.1	(1000X) 45.53 mM	ADD TO 500 mL dH <sub>2</sub> O 6705.5 mg	45.6 µM	1 mL
	ZnSO <sub>4</sub> • 7 H <sub>2</sub> O	287.54	1.2 mM	172.52 mg	1.2 µM	
	MnCl <sub>2</sub> • 4 H <sub>2</sub> O	197.9	1.0 mM	99 mg	1 µM	
	FeSO <sub>4</sub> • 7 H <sub>2</sub> O	278.01	18 mM	2502 mg	18 µM	
	(NH <sub>4</sub> ) <sub>6</sub> Mo <sub>7</sub> O <sub>24</sub> • 4 H <sub>2</sub> O	1235.86	2 mM	1235.6 mg	2 µM	
	CuSO <sub>4</sub> • 5 H <sub>2</sub> O	249.68	1 mM	124.8 mg	1 µM	
	CoCl <sub>2</sub> • 6 H <sub>2</sub> O	237.93	2 mM	237.9 mg	2 µM	
	Na <sub>2</sub> WO <sub>4</sub> • 2 H <sub>2</sub> O	329.85	0.33 mM	54.4 mg	0.33 µM	
<b>milliQ-H<sub>2</sub>O</b>						885 mL

**Directions to prepare medium:**

1. Make PIPES according to the preceding table and adjust to pH 6.75 by adding KOH.
2. Make additional stock solutions for P, MgCl<sub>2</sub>, (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>. Autoclave all.
3. To make stock solution for C7 METALS, mix metals in order listed, dissolving sodium citrate first. Dissolve each metal before adding the subsequent one. Autoclave.
4. To make media, mix all components together except CaCl<sub>2</sub>. Autoclave. Add CaCl<sub>2</sub>. (CaCl<sub>2</sub> is added afterwards to avoid calcium phosphates from being formed in the autoclave).