



Jun 12,
2019

PCC559 medium

Roscoff Culture Collection¹

¹CNRS-Sorbonne Université, Station Biologique, Place G. Tessier 29680 Roscoff FRANCE

Working

dx.doi.org/10.17504/protocols.io.s54eg8w

Roscoff Culture Collection



Daniel Vaultot

Station Biologique, Roscoff, France



ABSTRACT

Pasteur Collection medium for cyanobacteria (*Prochlorococcus*, *Synechococcus*).

Not used by the RCC.

Medium composition

- 1 ■ Under hood, add these nutriment autoclaved before (excepted vitamin):

Quantity	Compound
1 L	Turks Island Salts 1X
4 mL	Ferric chloride hexahydrate/EDTA solution
1mL	Trace metal for Prochlorococcus medium
1 mL	Na-PO4 solution (50 mM, pH 7.5)
4 mL	Ammonium sulfate solution (100 mM)
2 mL	Sodium hydrogenocarbonate solution (1 M)
1 mL	Vitamin B12 (Cyanocobalamin)

- Filter the medium on 0,2microns

Turks Island Salts 1X

- 2 ■ Dissolve these salts in the volume of water indicated

Quantity	Compound	Volume of dissolution
28 g	Sodium chloride (NaCl)	450 mL
670 mg	Potassium chloride (KCl)	50 mL
5,5 g	Magnesium chloride hexahydrate (MgCl2-6H2O)	100 mL
6,9 g	Magnesium sulfate heptahydrate (MgSO4-7H2O)	150 mL
1,45 g	Calcium chloride dihydrate (CaCl2-2H2O)	100 mL

- Mix the solutions in the order indicated
- Complete final volume to 1L of distilled water
- Autoclave
- Store in refrigerator

Ferric chloride hexahydrate/EDTA solution

- 3
 - To 10mL of HCl 0,1N, add gradually 270mg of Ferric chloride hexahydrate ($\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$)
 - To 10mL of NaOH 0,1N, add gradually 372mg of Titriplex III dihydrate ($\text{EDTA} \cdot \text{Na}_2$)
 - Mix both solutions
 - Complete final volume to 500mL of sterile water
 - Store in refrigerator

Trace metal for Prochlorococcus medium

- 4
 - Dissolve these salts in the volume of water indicated :

Quantity	Compound	Volume of dissolution
2.86 g	Boric acid (H_3BO_3)	150 mL
1.81 g	Manganese chloride tetrahydrate ($\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$)	150 mL
0.222 g	Zinc sulfate heptahydrate ($\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$)	150 mL
0.39 g	Sodium molybdate dihydrate ($\text{Na}_2\text{MoO}_4 \cdot 2\text{H}_2\text{O}$)	300 mL
0.049 g	Cobalt(II) nitrate hexahydrate ($\text{Co}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$)	150 mL

- Mix the solutions in the order indicated
- Complete final volume to 1L of sterile water
- Store 6 months in refrigerator



Attention: dilute 10 times with sterile water and filter on 0.2 microns before use

Other solutions

5 Na-P04 solution (50 mM, pH 7.5)

- Prepare two solutions :
- Dissolve 3,45g of monosodium dihydrogen phosphate (NaH_2PO_4) in 50mL of water
-
- Dissolve 4,45g of di-sodium hydrogenophosphate dihydrate ($\text{Na}_2\text{HPO}_4 \cdot 2\text{H}_2\text{O}$) in 50mL of water
-
- Make an equimolar mixture of this two solutions and adjust the pH at 7,5
- Store in refrigerator

Ammonium sulfate solution (100 mM)

- To 250mL of distilled water, add 3,3g of ammonium sulfate ($(\text{NH}_4)_2\text{SO}_4$)
- Autoclave the solution
- Store in refrigerator

Sodium hydrogenocarbonate solution (1 M)

- To 300mL of distilled water, add 25,2g of sodium hydrogenocarbonate (NaHCO_3)
- Autoclave the solution
- Store in refrigerator

Vitamin B12 (Cyanocobalamin)

- To 20mL of distilled water, add 20mg of vitamin B12
- Filter on 0,2 microns (=stock solution at 1mg/mL))
- Store in freezer
- The working solution (10µg/mL) is prepared by aseptical dilution of the vitamin B12 stock solution with sterile water



This is an open access protocol distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited