



MBL Medium – CSIRO Modification

Adapted for Freshwater Algae

Reference: Nichols, H. W. (1973) in Handbook of Phycological Methods, Ed. J. R. Stein, pp. 16-17. Camb. Univ. Press. (R. R. L. Guillard, personal communication).

This recipe closely resembles the Woods Hole MBL Medium referenced above. However, it is made up using stocks from other media used in ANACC.

STOCK SOLUTIONS	CONCENTRATION: g L ⁻¹ DEIONISED WATER (dH ₂ O)	VOLUME FOR MEDIUM
1. CaCl ₂ .2H ₂ O	50 g	0.8 mL
2. MgSO ₄ .7H ₂ O	80 g	0.5 mL
3. NaHCO ₃	12.6 g	1.0 mL
4. K ₂ HPO ₄	34.8 g	0.2 mL
5. NaNO ₃	150 g	0.5 mL
6. Na ₂ SiO ₃ .5H ₂ O	22.7 g	4.5 mL
7. Na ₂ EDTA.2H ₂ O	30 g	0.15 mL
8. Fe citrate	<i>see recipe below</i>	1.0 mL
9. Trace metals	<i>see recipe below</i>	0.5 mL
10. Vitamins	<i>see recipe below</i>	1.0 mL
11. Tris stock (Adjust pH to 7.2 with HCl)	250 g	2.0 mL
12. NH ₄ Cl	5.4 g	1.0 mL

Store all stock solutions in the refrigerator.

Fe citrate solution

Add both constituents to 1 L of dH₂O and autoclave to dissolve. Store solution in the dark.

CONSTITUENT	QUANTITY
Ferric citrate	9.0 g
Citric acid	9.0 g

MBL – Trace metal solution

Add each of the constituents to ~750 ml dH₂O, mixing thoroughly between additions to dissolve. Make solution up to 1 L.

CONSTITUENT	QUANTITY
CuSO ₄ .5H ₂ O	19.6 mg
ZnSO ₄ .7H ₂ O	44.0 mg
CoCl ₂ .6H ₂ O	22.0 mg
MnCl ₂ .4H ₂ O	360.0 mg
Na ₂ MoO ₄ .2H ₂ O	12.6 mg

Vitamins solution

Add constituents to 100 mL of dH₂O. Store solution in the dark. Remake solution after 3 months.

CONSTITUENT	CONCENTRATION: mg L ⁻¹ DEIONISED WATER (dH ₂ O)	QUANTITY FOR WORKING STOCK
Vitamin B ₁₂	100 mg	1.0 mL
Biotin	100 mg	1.0 mL
Thiamine HCl	<i>add reagent directly to stock</i>	20.0 mg

To prepare MBL Medium (1 L)

- Add each stock solution (**1 – 11**) in the volumes indicated to 1 L dH₂O.
- For species which cannot use nitrate substitute stock **5** with 1.0 mL of NH₄Cl stock (**12**).
- Autoclave at 121°C (15 psi for 20 mins).

To prepare MBL/NB Medium (1 L)

Make MBL Medium as above and add 2.5g Oxoid nutrient broth before autoclaving.

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