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🌐 K and K+Si medium

Roscoff Culture Collection¹

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We use this protocol and it's working

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ABSTRACT

Medium to grow most phytoplankton species in small eukaryotes (Mamiellophyceae, Pelagophyceae etc...).

When using for diatoms and coccolithophorids add silica (Si).

Reference

Keller, M.D., Selvin, R.C., Claus, W. & Guillard, R.R.L. 1987. Media for the culture of oceanic ultraphytoplankton. J. Phycol. 23:633–8.

BEFORE START INSTRUCTIONS

Please refer to our general recommendations to grow cultures :

<https://www.protocols.io/private/A48906DC1374AD6281495CB86A8F092F>

- 1 Filter 1L of old seawater of at least two months on prefilter and filter 0,2 microns

2 Heat seawater during 20min at 100°C

3 Under hood, to seawater, add these nutriments that have been autoclaved (excepted vitamin) :

<i>Quantity</i>	<i>Compound</i>	<i>Stock Solution</i>
1.0 mL	Sodium Nitrate (NaNO ₃)	75.0 g/L of H ₂ O
1.0 mL	Ammonium Chloride (NH ₄ Cl)	2.68 g/L of H ₂ O
1.0 mL	Na ₂ -Glycérophosphate (C ₃ H ₇ O ₆ PNa ₂ , 5 à 6 H ₂ O)	3.06 g/L of H ₂ O
1.0 mL	TRIS-Base (pH7.2)	121.1g/L of H ₂ O
1.0 mL	K Trace Metal Solution	(see recipe below)
0.1 mL	f/2 Vitamin Solution	(see recipe below)
For K+Si	Add	
1.0 mL	Sodium Metasilicate Nonahydrate (Na ₂ SiO ₃ .9H ₂ O)	30 g/L of H ₂ O

4 Filter the medium on 0.2 µm.

5 K Trace Metal Solution

- To 900 mL of H₂O add :

<i>Quantity</i>	<i>Compound</i>	<i>Stock Solution</i>
41,6g	EDTA Disodium Salt Dihydrate (Na ₂ EDTA.2H ₂ O)	
3,15g	Hexahydrated ferric chloride (FeCl ₃ .6H ₂ O)	1,5 cc (liquide)
1.0 ml	Sodium Molybdate Dihydrate (Na ₂ MoO ₄ .2H ₂ O)	6,3 g/L of H ₂ O
1.0 ml	Zinc Sulfate Heptahydrate (ZnSO ₄ .7H ₂ O)	22.0g/L of H ₂ O
1.0 ml	Cobalt Chloride Hexahydrate (CoCl ₂ .6H ₂ O)	10.0g/L of H ₂ O
1.0 ml	Manganese (II) chloride, tetrahydrate (MnCl ₂ .4H ₂ O)	180.0g/L of H ₂ O
1.0 ml	Copper(II) sulfate pentahydrate (Cu SO ₄ .5H ₂ O)	4.9g/L of H ₂ O
1.0 ml	Selenous acid (H ₂ SeO ₃)	1,29g/L of H ₂ O

- Make final volume up to 1.0L using H₂O. Heat to dissolve

6 f/2 Vitamin solution

- In 100mL of distilled water, dissolve 0,05g of biotin (vit. H) and 0,05g of cyanocobalamin (vit. B₁₂) = solution A
- In 0,5mL of solution A, add 0,05g of thiamine HCl (vit. B₁) and complete final volume to 50mL of distilled water
- Filter sterilize on Millipore 0,22µm
- Store in refrigerator or freezer