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WORKS FOR ME 1

Artificial seawater medium

COMMENTS 0

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ABSTRACT

This artificial seawater medium was adapted from the Synthetic Crenarchaeota Medium described in Könneke et al. 2005 (10.1038/nature03911).

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KEYWORDS

Artificial seawater medium, seawater growth medium, synthetic seawater

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1 Prepare the Thauer's vitamin solution and trace element solutions according to the recipes below. Aliquot for future use.

SCMU medium

2 Dissolve in 900 ml demineralized water:

compound	weight in g (for 900 ml medium)
NaCl	22
MgCl2 x 6 H2O	4.5
MgSO4 x 7 H2O	4.5
CaCl2 x 2 H2O	0.675

3 Autoclave at 121°C for 20 min at 15 psi.

4 After cooling to room temperature add (in the flow cabinet) from sterile stocks:

compound	amount (ml)
1M KH2PO4	0.261
TES I	0.45
TES II	0.9
Thauer's vitamin solution	0.45
NaHCO3	1.8

5 Adjust the pH to 7.8 using sterile 1M NaHCO3 solution.

Thauer's vitamin solution

6 Dissolve in 1l demineralized water:

compound	weight in g (for 1 l)

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compound	weight in g (for 1 l)
Biotin	0.02
Folic Acid	0.02
Pyridoxine HCl	0.1
Thiamine HCl	0.05
Riboflavin	0.05
Nicotinic Acid	0.05
DL Pantothenic Acid	0.05
p Aminobenzoic Acid	0.05
Choline Chloride	2
Vitamin B12	0.01

7 Adjust to pH 7.0 with KOH.

8 Filter sterilize (0.2 µm) and store at 4ºC.

Trace Elements Solution I (TES I)

9 Dissolve 10 g NTA (Trisodium Nitrilotriacetate) in 500 ml demineralized water.

10 Adjust to pH 8 using NaOH pellets.

11 Add 5 g FeSO4 x 7 H2O and dissolve.

12 Top up with demineralized water to a total volume of 1l.

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13 Filter sterilize (0.2 µm) or autoclave at 121°C for 20 min at 15 psi.

14 Store in the dark (slightly light sensitive) at RT.

Trace Elements Solution II (TES II)

15 Dissolve 5.5 g NTA (Trisodium Nitrilotriacetate) in 500 ml demineralized water.

16 Adjust to pH 8 using NaOH pellets.

17 Add the following ingredients and dissolve:

compound	weight in g (for 1 l)
ZnSO4 x 7 H2O	0.43
CoCl2 x 6 H2O	0.24
MnCl2 x 4 H2O	0.99
CuSO4 x 5 H2O	0.25
Na2MoO4 x 2 H2O	0.22
NiCl2 x 6 H2O	0.19
NaSeO4	0.1075
H3BO3	0.14
CeCl3 x 7 H2O	0.24

18 Top up with demineralized water to a total volume of 1l.

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19 Filter sterilize (0.2 µm) or autoclave at 121°C for 20 min at 15 psi.

20 Store in the dark (slightly light sensitive) at RT.

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