2016-07-14

MG Medium

Ichimura (1973)
Micronutrient solution by Provasoli & Pintner (1959)
NIES

Composition of MG Medium.

	stock solutions (1000x, 1 L)		volume of stock for 1 L nutrient solution	final concentration
	[mmol/L]	[g/L]	[mL]	[mmol/L]
$Ca(NO_3)_2 \cdot 4H_2O$	84.692	20	1	0.0847
KNO_3	989.02	100	1	0.989
ß-Na_2-glycero-phosphate$\cdot 5H_2O$	98.004	30	1	0.098
$MgSO_4 \cdot 7H_2O$	81.145	20	1	0.0811
micronutrient solution[1]			1	
FeEDTA solution[2]			1	
vitamin solution[3]			1	
HEPES	1678.49	400	1	1.678
NP-H_2O[4]			992	

Adjust **pH** to **7.2**.

[1]micronutrient solution - P IV metals - stocks (1000x, 1 L):

	stock [mmol/L]	stock [g/L]
$Na_2EDTA \cdot 2H_2O$ (Titriplex®III)	2.686	1
$FeCl_3 \cdot 6H_2O$	0.725	0.196
$MnCl_2 \cdot 4H_2O$	0.182	0.036
$ZnCl_2$	0.0763	0.0104
$CoCl_2 \cdot 6H_2O$	0.0168	0.004
$Na_2MoO_4 \cdot 2H_2O$	0.0103	0.0025
ddH_2O[5], ad 1 L		

[2]**FeEDTA solution stock** (1000x, 1 L):

	stock [mmol/L]	stock [g/L]
$(NH_4)_2Fe(SO_4)_2 \cdot 6H_2O$	1.790	0.702
$Na_2EDTA \cdot 2H_2O$ (Titriplex®III)	1.773	0.66
ddH_2O[5], ad 1 L		

[3]**vitamin solution stock** (1000x, 1 L)**:**

	stock [mmol/L]	stock [g/L]
cyanocobalamin (B12)	0.00007	0.0001
biotin (H)	0.0004	0.0001
thiamine HCl (B1)	0.0296	0.01
ddH_2O[5], ad 1 L		

Add vitamin solution to the autoclaved and cooled-down medium via sterile filtration.

[4]NP-H_2O nanopure water, Purelab Pulse (ELGA Lab water, Celle, Germany)

[5]ddH_2O double distilled water

References

1. Ichimura, T. (1973) The life cycle and its control in some species of Closterium, with special reference to the biological species problems. Thesis D. Sci., University of Tokyo, pp. 69.

2. Provasoli, L.; Pintner, I. J. (1959) Artificial media for fresh-water algae: problems and suggestions. In The Ecology of Algae. Spec. Pub. No. 2, Eds. Tryon, C. A., Jr. & Hartmann, R. T., Pymatuning Laboratory of Field Biology, University of Pittsburgh, Pittsburgh, p. 84-96.

3. Microbial Culture Collection at the NIES, Japan http://mcc.nies.go.jp/