

2016-07-14

VT Medium

Starr (1973)

Micronutrient solution by Provasoli & Pintner (1959)

NIES

Composition of VT Medium.

| | stock solutions (1000x, 1 L) | | volume of stock for 1 L nutrient solution [mL] | final concentration [mmol/L] |
|--|---------------------------------|-------|--|------------------------------------|
| | [mmol/L] | [g/L] | | |
| $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ | 498.8 | 117.8 | 1 | 0.5 |
| $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ | 162.29 | 40 | 1 | 0.162 |
| $\beta\text{-Na}_2\text{-glycero-phosphate} \cdot 5\text{H}_2\text{O}$ | 163.34 | 50 | 1 | 0.163 |
| KCl | 670.679 | 50 | 1 | 0.671 |
| micronutrient solution ¹ | | | 3 | |
| vitamin solution ² | | | 1 | |
| Glycylglycine | 3784.438 | 500 | 1 | 3.784 |
| $\text{NP-H}_2\text{O}^3$ | | | 991 | |

Adjust pH to 7.5.

¹micronutrient solution - P IV metals - stock (333x, 1 L):

| | stock [mmol/L] | stock [g/L] |
|---|----------------|-------------|
| $\text{Na}_2\text{EDTA} \cdot 2\text{H}_2\text{O}$ (Titrplex®III) | 2.686 | 1 |
| $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$ | 0.725 | 0.196 |
| $\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$ | 0.182 | 0.036 |
| ZnCl_2 | 0.0763 | 0.0104 |
| $\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$ | 0.0168 | 0.004 |
| $\text{Na}_2\text{MoO}_4 \cdot 2\text{H}_2\text{O}$ | 0.0103 | 0.0025 |
| ddH_2O^4 , ad 1 L | | |

²vitamin 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 |
| ddH₂O⁴, ad 1 L | | |

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

³NP-H₂O: nanopure water, Purelab Pulse (ELGA Lab water, Celle, Germany)

⁴ddH₂O double distilled water

References

1. Starr, R. C. (1973) Special methods-dry soil samples. In Handbook of Phycological Methods. Culture Methods and Growth Measurements, Ed. Stein, J. R., Cambridge University Press, Cambridge, p. 159-167.
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/>