

2016-07-14

WHM Medium

based on H.W. Nichols (1973)

Modified by MZCH

Composition of WHM Medium.

	stock solutions (1 L)		volume of stock for 1 L nutrient solution	final concentration
	[mmol/L]	[g/L]		
$\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$	250	36.8	4	1
$\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$	150	37	4	0.6
NaNO_3	1000	85	4	4
NaHCO_3	150	12.6	4	0.6
$\text{K}_2\text{HPO}_4 \cdot 3\text{H}_2\text{O}$	50	11.4	1	0.05
micronutrient solution ¹			1	
vitamin solution ²			1	
HEPES buffer	1000	238.31	2	2
ddH_2O ³			979	

Adjust pH to 6.

¹micronutrient solution (1000x, 1 L):

	stock [mmol/L]	stock [g/L]
$\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$	0.04	0.01
$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$	0.04	0.01
$\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$	11.66	3.15
$\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$	0.91	0.18
$\text{Na}_2\text{EDTA} \cdot 2\text{H}_2\text{O}$ (Titrplex® III)	11.71	4.36
$\text{Na}_2\text{MoO}_4 \cdot 2\text{H}_2\text{O}$	0.025	0.006
$\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$	0.08	0.022
H_3BO_3 ^{a)}	16.17	1
ddH_2O ³ , ad 1 L		

^{a)}not in WH medium

²vitamin solution (1000x, 1 L):

	stock [mmol/L]	stock [g/L]
thiamine HCl (B1)	0.296	0.1
biotin (H)	0.002	0.0005
cyanocobalamin (B12)	0.0004	0.0005
ddH₂O³, ad 1 L		

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

³ddH₂O double distilled water

Reference

Nichols, H.W. (1973) Growth media – freshwater. In Stein, J. R. (ed.). Handbook of Phycological Methods, pp. 16-17. Cambridge University Press, London.