2016-07-14

WH Medium

According to H.W. Nichols (1973)
Modified by MZCH

Composition of WH Medium.

	stock solutions (1 L)		volume of stock for 1 L nutrient solution	final concentration
	[mmol/L]	[g/L]	[mL]	[mmol/L]
$CaCl_2 \cdot 2H_2O$	25	3.68	10	0.25
$MgSO_4 \cdot 7H_2O$	15	3.7	10	0.15
$NaNO_3$	100	8.5	10	1
$Na_2SiO_3 \cdot 9H_2O$	10	2.84	10	0.1
$NaHCO_3$ / K_2HPO_4 solution[1]			10	0.15 / 0.05
micronutrient solution[2]			1	
vitamin solution[3]			1	
HEPES buffer[a)]	1000	238.31	2	2
ddH_2O[4]			946	

Adjust **pH** to **6** (modified, originally pH 7.2 before autoclaving)

[a)]modified, in original protocol Tris-buffer is used (final conc. in medium 0.5 g/L)

[1]**$NaHCO_3$ / K_2HPO_4 solution** (100x, 1 L)**:**

	stock [mmol/L]	stock [g/L]
$NaHCO_3$	15	1.26
K_2HPO_4	5	0.871
ddH_2O[4], ad 1 L		

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

	stock [mmol/L]	stock [g/L]
$CoCl_2 \cdot 6H_2O$	0.04	0.01
$CuSO_4 \cdot 5H_2O$	0.04	0.01
$FeCl_3 \cdot 6H_2O$	11.66	3.15
$MnCl_2 \cdot 4H_2O$	0.91	0.18
Na_2-EDTA$\cdot 2H_2O$ (Titriplex® III)	11.71	4.36
$Na_2MoO_4 \cdot 2H_2O$	0.025	0.006
$ZnSO_4 \cdot 7H_2O$	0.077	0.022
ddH_2O[4], ad 1 L		

[3]**vitamin stock 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
ddH_2O[4], ad 1 L		

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

[4]ddH_2O 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.