

2016-07-14

WPF Medium

Waris (1953)
Modified by MZCH

Composition of WPF Medium.

	stock solutions (1000x, 1 L)		volume of stock for 1 L nutrient solution [mL]	final concentration [mmol/L]
	[mmol/L]	[g/L]		
KNO₃	1000	101.11	1	1
MgSO₄·7H₂O	81.14	20	1	0.081
(NH₄)₂HPO₄	151.46	20	1	0.151
CaSO₄ (saturated sol.)^{a)}		172	1	
micronutrient solution¹			1	
soil extract²			50	
FeEDTA solution³			1	
vitamin solution⁴			1	
NP-H₂O⁵			943	

Add 1 g peptone (from meat, tryptic or pancreatic digestion) to 1 L of medium.

Adjust **pH** to 6

^{a)}modified by MZCH

¹micronutrient solution (1000x, 1 L):

	stock [mmol/L]	stock [g/L]
CoCl₂·6H₂O	0.0168	0.004
H₃BO₃	18.437	1.14
MnCl₂·4H₂O	0.728	0.144
Na₂EDTA·2H₂O (Titriplex® III)	8.06	3
ZnSO₄·7H₂O	0.073	0.021
ddH₂O⁶, ad 1 L		

²preparation of soil extract:

Weigh 50 g of unfertilized acre soil in a 1 L Erlenmeyer flask. Add 625 mL of dest. H₂O. Heat the soil solution and keep at 100 °C for 5 minutes. Place a piece of pleated filter paper on top of a second 1 L Erlenmeyer flask and fill a spatula tip of CaCO₃ on the filter. Filter the soil extract (if necessary overnight) and then stir for 15 min. The extract is then centrifuged for 15 minutes at 2500 g and 20 °C. Transfer and aliquot the supernatant into 50 mL Falcon tubes.

Store at -20 °C.

The volume of the added soil extract should be adapted to the nutrient requirements of the cultured strains.

³FeEDTA solution (stock, 100x):

Add 0.52 g EDTA (Titriplex® II) and 0.5 g FeSO₄·7H₂O to 5.4 mL of 1 M KOH solution, ad 100 mL ddH₂O⁶

⁴vitamin stock solution (1000x, 1 L):

	stock [mmol/L]	stock [g/L]
thiamine HCl (B1)	0.296	0.1
biotin (H)	0.0041	0.001
cyanocobalamin (B12)	0.00015	0.0002
nicotinamide	0.0008	0.0001
ddH₂O⁶, ad 1 L		

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

⁵NP-H₂O nanopure water, Purelab Pulse (ELGA Lab water, Celle, Germany)

⁶ddH₂O double distilled water

Reference

Waris, H. (1953) The significance for algae of chelating substances in the nutrient solutions. *Physiol. Plant.* **6**, 538-43.