DYV MEDIUM

UTEX MEDIUM RECIPE

DIRECTIONS

Modification of Andersen's recipe. Suitable for xenic cultures of freshwater chrysophytes and synurophytes.

For 1 Liter Total

1. To approximately 950 mL of dH_2O, add each of the components in the order specified (except vitamins) while stirring continuously.
2. Adjust the pH to 6.7.
3. Bring the total volume to 1 Liter with dH_2O.
   * *For 1.5% agar medium add 15 g of agar into the flask; do not mix.*
4. Cover and autoclave medium.
5. Allow to cool and add vitamins.
   * *For agar medium add vitamins, mix, and dispense before agar solidifies.*
6. Store at refrigerator temperature.

#	COMPONENT	AMOUNT	STOCK SOLUTION CONCENTRATION	FINAL CONCENTRATION
1	**MES** (CAS: 7365-45-9)	1.95 g/L		10 mM
2	**MWC Metal Solution**	10 mL/L		
3	**$CaCl_2 \cdot 2H_2O$** (CAS: 10035-04-8)	1 mL/L	2 g/100 mL dH_2O	0.14 mM
4	**$MgSO_4 \cdot 7H_2O$** (CAS: 10034-99-8)	1 mL/L	7.4 g/100 mL dH_2O	0.3 mM
5	**Na_2glycerophosphate$\cdot 5H_2O$** (CAS: 13408-09-8)	1 mL/L	1 g/100 mL dH_2O	0.03 mM
6	**$NaNO_3$** (CAS: 7631-99-4)	1 mL/L	2 g/100 mL dH_2O	0.24 mM
7	**$Na_2SiO_3 \cdot 9H_2O$** (CAS: 13517-24-3)	1 mL/L	1.5 g/100 mL dH_2O	0.05 mM
8	**NH_4NO_3** (CAS: 6484-52-2)	1 mL/L	1 g/100 mL dH_2O	0.12 mM
9	**KCl** (CAS: 7447-40-7)	1 mL/L	1 g/100 mL dH_2O	0.13 mM
10	**DYV Metal Solution**	1 mL/L	*See following pages for recipe.*	
11	**Vitamin B12**	1 mL/L	*See following pages for recipe.*	
12	**Biotin Vitamin Solution**	1 mL/L	*See following pages for recipe.*	
13	**Thiamine Vitamin Solution**	1 mL/L	*See following pages for recipe.*	

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MWC Metal Solution Component

DIRECTIONS

For 1 Liter Total

1. To approximately 950 mL of dH_2O, add the nutrients in the order listed while stirring continuously.
   * ***Note:*** Each component should be fully dissolved before adding the next.
2. Bring total volume to 1 Liter with dH_2O.
3. Store at refrigerator temperature.

#	COMPONENT	AMOUNT	STOCK SOLUTION CONCENTRATION
1	**$Na_2EDTA•2H_2O$** (CAS: 6381-92-6)	0.44 g/L	0.012 mM
2	**H_3BO_3** (CAS: 10043-35-3)	0.097 g/L	0.016 mM
3	**$FeCl_3•6H_2O$** (CAS: 10025-77-1)	0.315 g/L	0.01 mM
4	**$MnCl_2•4H_2O$** (CAS: 13446-34-9)	0.018 g/L	0.001 mM
5	**$ZnSO_4•7H_2O$** (CAS: 7446-20-0)	0.002 g/L	0.07 µM
6	**$CoCl_2•6H_2O$** (CAS: 7791-13-1)	0.001 g/L	0.042 µM
7	**$Na_2MoO_4•2H_2O$** (CAS: 10102-40-6)	0.0006 g/L	0.025 µM

Vitamin B_{12} Solution Component

DIRECTIONS

For 200 mL Total

1. Prepare 200 mL of HEPES buffer.
2. Adjust the pH to 7.8.
3. Add Vitamin B_{12} and wait until fully dissolved.
4. Sterilize by 0.45 µM Millipore filter.
5. Store in the dark at freezer temperature.

#	COMPONENT	AMOUNT	STOCK SOLUTION CONCENTRATION
1	**HEPES buffer pH 7.8** (CAS: 7365-45-9)	2.4 g/200 mL dH_2O	50 mM
2	**Vitamin B_{12} (cyanocobalamin)** (CAS: 68-19-9)	0.027 g/200 mL dH_2O	0.1 mM

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Biotin Vitamin Solution Component
DIRECTIONS

For 200 mL Total

1. Prepare 200 mL of HEPES buffer.
2. Adjust the pH to 7.8.
3. Add biotin (0.1 mM) and wait until fully dissolved.
4. Sterilize by 0.45 µM Millipore filter.
5. Store in the dark at freezer temperature.

#	COMPONENT	AMOUNT	STOCK SOLUTION CONCENTRATION
1	**HEPES buffer pH 7.8** (CAS: 7365-45-9)	2.4 g/200 mL dH_2O	50 mM
2	**Biotin** (CAS: 58-85-5)	0.005 g/200 mL dH_2O	~0.1 mM

Thiamine Vitamin Solution Component
DIRECTIONS

For 200 mL Total

1. Prepare 200 mL of HEPES buffer.
2. Adjust the pH to 7.8.
3. Add Thiamine (1 mM) and wait until fully dissolved.
4. Sterilize by 0.45 µM Millipore filter.
5. Store in the dark at freezer temperature.

#	COMPONENT	AMOUNT	STOCK SOLUTION CONCENTRATION
1	**HEPES buffer pH 7.8** (CAS: 7365-45-9)	2.4 g/200 mL dH_2O	50 mM
2	**Thiamine** (CAS: 67-03-8)	0.067 g/200 mL dH_2O	~1 mM

DYV Metal Solution Component
DIRECTIONS

For 1 Liter Total

1. Prepare 950 mL dH_2O, add the following components in the order listed while stirring continuously.
   * ***Note:*** *Each component should be fully dissolved before adding the next component.*
2. Bring the total volume to 1 Liter with dH_2O.
3. Store at refrigerator temperature.

#	COMPONENT	AMOUNT	STOCK SOLUTION CONCENTRATION
1	**Na_3VO_4** (CAS: 13721-39-6)	0.002 g/L dH_2O	11 nM
2	**H_2SeO_3** (CAS: 7783-008)	0.004 g/L dH_2O	31 nM

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