

MES-VOLVOX MEDIUM

UTEX MEDIUM RECIPE

DIRECTIONS

General purpose medium for freshwater strains, especially those requiring ammonium. Suitable for xenic and axenic cultures. Modified volvox medium.

For 1 Liter Total

1. To approximately 950 mL of dH₂O, 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 dH₂O.
 - * 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	Ca(NO ₃) ₂ •4H ₂ O (CAS: 13477-34-4)	1 mL/L	11.8 g/100 mL dH ₂ O	0.5 mM
2	MgSO ₄ •7H ₂ O (CAS: 10034-99-8)	1 mL/L	4 g/100 mL dH ₂ O	0.16 mM
3	Na ₂ glycerophosphate•5H ₂ O (CAS: 13408-09-8)	1 mL/L	5 g/100 mL dH ₂ O	0.16 mM
4	KCl (CAS: 7447-40-7)	1 mL/L	5 g/100 mL dH ₂ O	0.67 mM
5	MES (CAS: 1266615-59-1)	1.95 g/L		10 mM
6	P-IV Metal Solution	6 mL/L	See following pages for recipe.	
7	NH ₄ Cl (CAS: 12125-02-9)	1 mL/L	2.67 g/100 mL dH ₂ O	0.5 mM
8	Vitamin B12	1 mL/L	See following pages for recipe.	
	Biotin Vitamin Solution	1 mL/L	See following pages for recipe.	

P-IV Metal Solution Component

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DIRECTIONS

For 1 Liter Total

1. To approximately 950 mL of dH₂O, add the nutrients in the order listed while stirring continuously.
*** Note:** The Na₂EDTA should be fully dissolved before adding other components.
2. Bring total volume to 1 Liter with dH₂O.
3. Store at refrigerator temperature.

#	COMPONENT	AMOUNT	STOCK SOLUTION CONCENTRATION
1	Na₂EDTA•2H₂O (CAS: 6381-92-6)	0.75 g/L	2 mM
2	FeCl₃•6H₂O (CAS: 10025-77-1)	0.097 g/L	0.36 mM
3	MnCl₂•4H₂O (CAS: 13446-34-9)	0.041 g/L	0.21 mM
4	ZnCl₂ (CAS: 7646-85-7)	0.005 g/L	0.037 mM
5	CoCl₂•6H₂O (CAS: 7791-13-1)	0.002 g/L	8.4 µM
6	Na₂MoO₄•2H₂O (CAS: 10102-40-6)	0.004 g/L	0.017 mM

Vitamin B₁₂ Solution Component

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DIRECTIONS

For 200 mL Total

1. Prepare 200 mL of HEPES buffer.
2. Adjust the pH to 7.8.
3. Add Vitamin B₁₂ 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 ₂ O	50 mM
2	Vitamin B ₁₂ (cyanocobalamin) (CAS: 68-19-9)	0.027 g/200 mL dH ₂ O	0.1 mM

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 ₂ O	50 mM
2	Biotin (CAS: 58-85-5)	0.005 g/200 mL dH ₂ O	~0.1 mM