

M199 Liquid Medium Formula

Components	Concentration (mg/L)
Amino Acids	
Glycine	50
L-Alanine	25
L-Arginine hydrochloride	70
L-Aspartic acid	30
L-Cysteine hydrochloride-H ₂ O	0.1
L-Cystine 2HCl	26
L-Glutamic Acid	75
L-Glutamine	100
L-Histidine hydrochloride-H ₂ O	21.88
L-Hydroxyproline	10
L-Isoleucine	40
L-Leucine	60
L-Lysine hydrochloride	70
L-Methionine	15
L-Phenylalanine	25
L-Proline	40
L-Serine	25
L-Threonine	30
L-Tryptophan	10
L-Tyrosine disodium salt dihydrate	58
L-Valine	25
Vitamins	
Ascorbic Acid	0.05
Biotin	0.01
Choline chloride	0.5
D-Calcium pantothenate	0.01
Folic Acid	0.01
Menadione (Vitamin K3)	0.01
Niacinamide	0.025
Nicotinic acid (Niacin)	0.025
Para-Aminobenzoic Acid	0.05
Pyridoxal hydrochloride	0.025
Pyridoxine hydrochloride	0.025
Riboflavin	0.01
Thiamine hydrochloride	0.01
Vitamin A (acetate)	0.1

Vitamin D2 (Calciferol)	0.1
D-alpha-Tocopheryl acetate	0.008522445
i-Inositol	0.05
Inorganic Salts	
Calcium Chloride (CaCl ₂) (anhyd.)	200
Ferric nitrate (Fe(NO ₃)-9H ₂ O)	0.7
Magnesium Sulfate (MgSO ₄) (anhyd.)	97.67
Potassium Chloride (KCl)	400
Sodium Bicarbonate (NaHCO ₃)	2200
Sodium Chloride (NaCl)	6100
Sodium Phosphate monobasic (NaH ₂ PO ₄) anhydrous	140
Other Components	
2-deoxy-D-ribose	0.5
Adenine sulfate	10
Adenosine 5'-phosphate	0.2
Adenosine 5'-triphosphate	1
Cholesterol	0.2
D-Glucose (Dextrose)	1000
Glutathione (reduced)	0.05
Guanine hydrochloride	0.3
Hypoxanthine	0.342415094
Phenol Red	20
Ribose	0.5
Sodium Acetate	50
Thymine	0.3
Tween 80®	20
Uracil	0.3
Xanthine	0.34