

## Formulations

MEDIUM 199 WITH EARLE'S SALTS (E-199)		MEDIUM 199 WITH HANKS' SALTS (H-199)	
<b>Cat.# 112-022</b>		<b>Cat.# 112-023</b>	
COMPONENTS	mg / L	COMPONENTS	mg / L
<b>Inorganic Salts</b>		<b>Inorganic Salts</b>	
CaCl <sub>2</sub> •2H <sub>2</sub> O	264.92	CaCl <sub>2</sub> •2H <sub>2</sub> O	185.45
Fe(NO <sub>3</sub> ) <sub>3</sub> • 9H <sub>2</sub> O	0.72	Fe(NO <sub>3</sub> ) <sub>3</sub> • 9H <sub>2</sub> O	0.72
KCl	400.00	KCl	400.00
MgSO <sub>4</sub> (anhydrous)	97.67	KH <sub>2</sub> PO <sub>4</sub>	60.00
NaCl	6800.00	MgSO <sub>4</sub> (anhydrous)	97.67
NaHCO <sub>3</sub>	2200.00	NaCl	8000.00
NaH <sub>2</sub> PO <sub>4</sub> (anhydrous)	121.74	NaHCO <sub>3</sub>	1400.00
		NaH <sub>2</sub> PO <sub>4</sub> (anhydrous)	47.70
<b>Other Components</b>		<b>Other Components</b>	
Adenine sulfate	10.00	Adenine sulfate	10.00
Adenosinetriphosphate (ATP)•2Na	1.00	Adenosinetriphosphate (ATP)•2Na	1.00
Adenylic acid	0.20	Adenylic acid	0.20
Cholesterol	0.20	Cholesterol	0.20
Deoxyribose	0.50	Deoxyribose	0.50
D-Glucose	1000.00	D-Glucose	1000.00
Glutathione	0.05	Glutathione	0.05
Guanine•HCl	0.30	Guanine•HCl	0.30
Hypoxanthine•2Na	0.399	Hypoxanthine•2Na	0.399
Phenol red•Na	20.40	Phenol red•Na	20.40
D-Ribose	0.50	Ribose	0.50
Sodium acetate (anhydrous)	50.00	Sodium acetate (anhydrous)	50.00
Thymine	0.30	Thymine	0.30
Tween 80®	20.00	Tween 80®	20.00
Uracil	0.30	Uracil	0.30
Xanthine•Na	0.343	Xanthine•Na	0.343
<b>Amino Acids</b>		<b>Amino Acids</b>	
DL-Alanine	50.00	DL-Alanine	50.00
L-Arginine•HCl	70.00	L-Arginine•HCl	70.00
DL-Aspartic acid	60.00	DL-Aspartic acid	60.00
L-Cysteine•HCl•H <sub>2</sub> O	0.11	L-Cysteine•HCl•H <sub>2</sub> O	0.11
L-Cystine•2HCl	26.08	L-Cystine•2HCl	26.08
DL-Glutamic acid•H <sub>2</sub> O	150.00	DL-Glutamic acid•H <sub>2</sub> O	150.00

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COMPONENTS	mg / L	COMPONENTS	mg / L
<b>Amino Acids (continued)</b>		<b>Amino Acids (continued)</b>	
L-Glutamine	100.00*	L-Glutamine	100.00*
Glycine	50.00	Glycine	50.00
L-Histidine•HCl•H <sub>2</sub> O	21.88	L-Histidine•HCl•H <sub>2</sub> O	21.88
Hydroxy-L-proline	10.00	Hydroxy-L-proline	10.00
DL-Isoleucine	40.00	DL-Isoleucine	40.00
DL-Leucine	120.00	DL-Leucine	120.00
L-Lysine•HCl	70.00	L-Lysine•HCl	70.00
DL-Methionine	30.00	DL-Methionine	30.00
DL-Phenylalanine	50.00	DL-Phenylalanine	50.00
L-Proline	40.00	L-Proline	40.00
DL-Serine	50.00	DL-Serine	50.00
DL-Threonine	60.00	DL-Threonine	60.00
DL-Tryptophan	20.00	DL-Tryptophan	20.00
L-Tyrosine•2Na•2H <sub>2</sub> O	57.66	L-Tyrosine•2Na•2H <sub>2</sub> O	57.66
DL-Valine	50.00	DL-Valine	50.00
<b>Vitamins</b>		<b>Vitamins</b>	
p-Aminobenzoic acid	0.050	p-Aminobenzoic acid	0.500
Ascorbic acid	0.050	Ascorbic acid	0.500
d-Biotin	0.010	d-Biotin	0.100
Calciferol	0.100	Calciferol	0.100
D-Ca pantothenate	0.010	D-Ca pantothenate	0.100
Choline chloride	0.500	Choline chloride	0.500
Folic acid	0.010	Folic acid	0.010
i-Inositol	0.050	i-Inositol	0.050
Menadione, sodium bisulfite•3H <sub>2</sub> O	0.010	Menadione, sodium bisulfite•3H <sub>2</sub> O	0.010
Nicotinamide	0.025	Nicotinamide	0.025
Nicotinic acid	0.025	Nicotinic acid	0.025
Pyridoxal•HCl	0.025	Pyridoxal•HCl	0.025
Pyridoxal•HCl	0.025	Pyridoxal•HCl	0.025
Riboflavin	0.010	Riboflavin	0.010
Thiamine•HCl	0.010	Thiamine•HCl	0.010
DL-α-Tocopherol phosphate•Na	0.010	DL-α-Tocopherol phosphate•Na	0.010
Vitamin A acetate	0.140	Vitamin A acetate	0.140
<b>References:</b> Morgan, J.F., et al., (1950) Proc. Soc. Exp. Biol. Med., <b>73</b> :1-8 Morgan, J.F., et al., (1955) J. Nat. Cancer Inst., <b>16</b> :557 Morton, H.J., (1970) In Vitro, <b>6</b> :89-108		*Omitted from preparation. Add L-glutamine (Cat.#118- 084-060) to a final concentration of 0.7mM prior to use. Tween 80® IS a registered trademark of ICI Americas, Inc.	