

## Medium 199

**With Earle's salts, 25mM HEPES buffer and Sodium bicarbonate  
Without L-Glutamine  
1X Liquid Cell Culture Medium**

**Product Code: AL094**

### Product Description :

Medium 199 was the first nutritionally defined medium developed by Morgan, Morton, and Parker in 1950. This complex medium was formulated specifically for nutritional studies on primary chick embryo fibroblasts in the absence of any additives. It was observed that explanted tissue could survive in Medium 199 without serum but long term cultivation of cells required supplementation of the medium with serum.

Media 199 are formulated with either Hank's salts or Earle's salts. The medium when supplemented with serum can be used for growth of a wide variety of cells. Media 199 are presently used for the maintenance of non-transformed cells, vaccine and virus production and primary explants of epithelial cells.

AL094 is Medium 199 with Earle's salts, 25mM HEPES buffer and sodium bicarbonate. HEPES, a zwitterionic buffer having a pKa of 7.3 at 37°C prevents the initial rise in pH that tends to occur at the initiation of a culture and increases the buffering capacity of the medium. It does not contain L-Glutamine. Users are advised to review the literature for recommendations regarding medium supplementation and physiological growth requirements specific for different cell lines.

### Composition :

Ingredients	mg/L
<b>INORGANIC SALTS</b>	
Calcium chloride dihydrate	265.000
Ferric nitrate nonahydrate	0.720
Magnesium sulphate anhydrous	97.720
Potassium chloride	400.000
Sodium acetate anhydrous	50.000
Sodium bicarbonate	2200.000
Sodium chloride	6800.000
Sodium phosphate monobasic	122.000
<b>AMINO ACIDS</b>	
Glycine	50.000
L-Alanine	25.000
L-Arginine hydrochloride	70.000

L-Aspartic acid	30.000
L-Cysteine hydrochloride monohydrate	0.100
L-Cystine dihydrochloride	26.000
L-Glutamic acid	67.000
L-Histidine hydrochloride monohydrate	22.000
L-Hydroxyproline	10.000
L-Isoleucine	20.000
L-Leucine	60.000
L-Lysine hydrochloride	70.000
L-Methionine	15.000
L-Phenylalanine	25.000
L-Proline	40.000
L-Serine	25.000
L-Threonine	30.000
L-Tryptophan	10.000
L-Tyrosine disodium salt	57.660
L-Valine	25.000
<b>VITAMINS</b>	
Ascorbic acid	0.050
Calciferol	0.100
Choline chloride	0.500
D-Biotin	0.010
D-Ca-Pantothenate	0.010
DL-Tocopherol phosphate Disodium Salt	0.010
Folic acid	0.010
Menadione	0.010
Nicotinamide	0.025
Nicotinic acid	0.025
Pyridoxal hydrochloride	0.025
Pyridoxine hydrochloride	0.025
Retinol Acetate	0.140
Riboflavin	0.010
Thiamine hydrochloride	0.010
i-Inositol	0.050
p-Amino benzoic acid (PABA)	0.050
<b>OTHERS</b>	
Adenine sulphate	10.000
Adenosine monophosphate	0.200
Adenosine triphosphate	1.000
Cholesterol	0.200

Deoxyribose	0.500
Glucose	1000.000
Glutathione reduced	0.050
Guanine hydrochloride	0.354
HEPES Buffer	5958.000
Hypoxanthine	0.354
Phenol red sodium Salt	15.000
Polysorbate 80	4.90
Ribose	0.500
Thymine	0.300
Uracil	0.300
Xanthine	0.344

### **Directions :**

1. Add 3.42 ml of 200mM L-glutamine (TCL012) for 1 litre of medium.

### **Material required but not provided :**

L-Glutamine solution 200mM (TCL012)

### **Quality Control:**

#### **Appearance**

Orangish red colored, clear solution.

#### **pH**

7.00 -7.60

#### **Osmolality in mOsm/Kg H<sub>2</sub>O**

280.00 -320.00

#### **Sterility**

No bacterial or fungal growth is observed after 14 days of incubation, as per USP specification.

#### **Cultural Response**

The growth promotion capacity of the medium is assessed qualitatively by analyzing the cells for the morphology and quantitatively by estimating the cell counts and comparing it with a control medium through minimum three subcultures.

#### **Endotoxin Content**

NMT 5EU/ml

### **Storage and Shelf Life:**

Store at 2-8°C away from bright light.

Shelf life is 18 months.

Use before expiry date given on the product label.

Revision : 1 / 2011

#### **Disclaimer :**

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