M199

Medium 199

w/ 5.5mM Glucose, 0.68mM L-Glutamine, Earle's salt, Phenol red and 2.2g/L Sodium bicarbonate
w/o HEPES and Sodium pyruvate

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Technical data sheet |Catalog No-RBM19901

Product information

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.

The composition of Medium 199 can vary slightly depending on the specific requirements of the cell line being cultured, however, the basic formulation typically includes salts such as potassium chloride, sodium chloride, calcium chloride, and magnesium sulfate. Medium 199 also contains various essential and non-essential amino acids, glucose, cholesterol, pyrimidines, and vitamins, including thiamine, riboflavin, and biotin. It does not contain proteins, lipids, or growth factors; instead, M199 utilizes a sodium bicarbonate buffer system and requires a 5-10% CO2 environment to maintain a physiologically suitable pH. Medium 199 is formulated with either Hank's salts or Earle's salts.

RBM19901 is supplemented with Earle's Salts,1.0gm/L glucose, L-glutamine, sodium bicarbonate and phenol red. The media is formulated without sodium pyruvate and HEPES.

Storage temperature	2-8°C, protect from light
Shelf life	12 months

Applications

The medium when supplemented with serum can be used for growth of a wide variety of cells. Medium 199 is presently used for the maintenance of non-transformed cells, vaccine and virus production and primary explants of epithelial cells.

Quality Control

Appearance	Orangish red, clear liquid
pH	7.0 -7.6
Osmolality	270–310 mOsm/kg
Sterility[1]	Sterile
Endotoxin[2]	< 1.0 EU/ml
Cell culture test[3]	Meets the requirements

Note:

[1]Sterility Testing (Bacterial and Fungal) carried out in accordance with < USP 71 >

[2]Bacterial endotoxin testing carried out in accordance with < USP 85 >

[3]Indicative cell line was seeded in complete control medium and complete test medium in a 96-well plate in triplicates and incubated at 37°C in a 5% CO_2 environment. Growth rates and viability of the cells in test medium must be comparable to the cultures grown in control medium.

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Composition

Components	Concentration (mg/L)
Amino Acids	
Glycine	50
L-Alanine	25
L-Arginine hydrochloride	70
L-Aspartic acid	30
L-Cysteine hydrochloride monohydrate	0.1
L-Cystine dihydrochloride	26
L-Glutamic acid	75
L-Glutamine	100
L-Histidine hydrochloride monohydrate	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	4
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
alpha Tocopherol phos. Na salt	0.01
i-Inositol	0.05
Inorganic Salts	
Calcium chloride (anhyd.)	200
Ferric nitrate nonahydrate	0.7
Magnesium sulfate (anhyd.)	97.67
Potassium chloride	400
Sodium acetate	50
Sodium bicarbonate	2200
Sodium chloride	6800
Sodium Phosphate monobasic	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 Na	0.4
Phenol red	20
Ribose	0.5
Thymine	0.3
Tween 80®	20
Uracil	0.3
Xanthine-na	0.34
HEPES	–

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