MCDB 105 MEDIUM
With L-Glutamine and 25 mM HEPES

Product Number **M6395**
Storage Temperature 2-8°C

Product Description
MCDB media were designed for the low-protein or serum-free growth of specific cell types using hormones, growth factors, trace elements or low levels of dialyzed fetal bovine serum protein (FBSP). Each MCDB medium was formulated (qualitatively and quantitatively) to provide a defined and optimally balanced nutritional environment that selectively promoted growth of a specific cell type. MCDB 105 and 110 are modifications of MCDB 104 medium. These modifications are optimized for long-term survival and rapid clonal growth of human diploid fibroblast-like cells (WI-38, MRC-5, IMR-90) and of low-passage human foreskin fibroblasts using FBSP or hormone and growth factor supplements.

MCDB-105 MEDIUM, Product No. M6395 is one of the cell culture media available from Sigma. The selection of a nutrient medium is strongly influenced by 1] type of cell, 2] type of culture [monolayer, suspension, clonal] and 3] degree of chemical definition necessary. It is important to review the literature for recommendations concerning medium, supplementation and physiological parameters required for a specific cell line.

Components	g/L
Ammonium Metavanadate	0.000000585
Calcium Chloride (anhydrous)	0.1109
Cupric Sulfate•5H_2O	0.00000025
Ferrous Sulfate•7H_2O	0.00139
Magnesium Sulfate (anhydrous)	0.12038
Manganese Sulfate	0.000000151
Molybdic Acid•4H_2O (ammonium)	0.00000124
Nickel Chloride•6H_2O	0.00000012
Potassium Phosphate Monobasic (anhydrous)	0.40827
Sodium Chloride	6.546
Sodium Metasilicate•9 H_2O	0.0001421
Sodium Selenite	0.000005187
Stannous Chloride•2 H_2O	0.000000113
Zinc Sulfate•7 H_2O	0.000144
L-Alanine	0.00891
L-Arginine•HCl	0.2107
L-Asparagine• H_2O	0.015
L-Aspartic Acid	0.01331
L-Cysteine•HCl•H_2O	0.00878
L-Glutamic Acid	0.01471
L-Glutamine	0.3653
Glycine	0.00751
L-Histidine•HCl•H_2O	0.02097
L-Isoleucine	0.00394
L-Leucine	0.01312
L-Lysine•HCl	0.03654
L-Methionine	0.00448
L-Phenylalanine	0.00496
L-Proline	0.03453
L-Serine	0.01051
L-Threonine	0.01191
L-Tryptophan	0.00204
L-Tyrosine•2Na•2H_2O	0.00784
L-Valine	0.01172
d-Biotin	0.00000733
Choline Chloride	0.01396
Folinic Acid (calcium)	0.000000512
myo-Inositol	0.01802
Niacinamide	0.00611
D-Pantothenic Acid (hemicalcium)	0.000238
Pyridoxine•HCl	0.0000617
Riboflavin	0.000113
Thiamine•HCl	0.000337
Vitamin B-12	0.000136
Adenine•HCl	0.00172
D-Glucose	0.72064
HEPES	5.958
Linoleic Acid	0.0000028
Phenol Red•Na	0.001242
Putrescine•2HCl	0.000000161
Pyruvic Acid•Na	0.11
D,L-6,8-Thioctic Acid	0.00000206
Thymidine	0.0000727

Precautions and Disclaimer
REAGENT
For R&D use only.
Not for drug, household or other uses.

Preparation Instructions
Powdered media are extremely hygroscopic and should be protected from atmospheric moisture. The entire contents of each package should be used immediately after opening. Preparing a concentrated solution of medium is not recommended as precipitates may form.

Supplements can be added prior to filtration or introduced aseptically to sterile medium. The nature of the supplement may affect storage conditions and shelf life of the medium.

1. Measure out 90% of final required volume of water. Water temperature should be 15-20 C.
2. While gently stirring the water, add the powdered medium. Stir until dissolved. Do NOT heat.
3. Rinse original package with a small amount of water to remove all traces of powder. Add to solution in step 2. No sodium bicarbonate supplementation is required.
4. While stirring, adjust the pH of the medium to 0.1-0.3 pH units below the desired pH since it may rise during filtration. The use of 1N HCl or 1N NaOH is recommended.
5. Add additional water to bring the solution to final volume.
6. Sterilize immediately by filtration using a membrane with a porosity of 0.22 microns.
7. Aseptically dispense medium into sterile container.

Storage/Stability

Store the dry powdered medium at 2-8°C under dry conditions and liquid medium at 2-8°C in the dark. Deterioration of the powdered medium may be recognized by any or all of the following: [1] color change, [2] granulation/clumping, [3] insolubility. Deterioration of the liquid medium may be recognized by any or all of the following: [1] pH change, [2] precipitate or particulate matter throughout the solution, [3] cloudy appearance [4] color change. The nature of supplements added may affect storage conditions and shelf life of the medium. Product label bears expiration date.

Procedure

MATERIALS REQUIRED BUT NOT PROVIDED
Water for tissue culture use [W3500]
1N Hydrochloric Acid [H9892]
1N Sodium Hydroxide [S2770]
Medium additives as required

References

1. Peehl, DM. and Ham, R.G., (1980). In Vitro, 16:526.
2. Bettger, W.J., et al., (1981) Rapid Clonal Growth and Serial Passage of Human Diploid Fibroblasts in a Lipid-Enriched Synthetic Medium Supplemented with Epidermal Growth Factor, Insulin, and Dexamethasone. Proc. Natl. Acad. Sci., USA, 78:9, 5588-5592.

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