Product Profile

Product Name:	*Basal Medium Eagle(BME), Earle's Salts Base(10X), Without L-Glutamine, Without Sodium Bicarbonate*
Product Catalog Number	*01-015-5*
Concentration:	10X
Unit Size Availability:	(A)500ml (B)100ml
Formulation:	Clear Reddish-Colored Solution
Optimal Storage Conditions:	2-8°C
Stability: (Under Specified Handling & Storage Conditions)	*Please Refer To Product Label*

Important Note! Please read the ***MSDS*** and ***Product Profile*** carefully in their entirety ***before*** using this material for possible safety precautions and potential hazards.

Product Description:

Basal Medium Eagle (BME), originally developed by Harry Eagle, is one of the most commonly used of all synthetic cell culture media. BME according to the Tissue Culture Association refers only to several formulae developed by Eagle to support transformed HeLa cells in monolayer culture. HeLa denotes those epithelial tumor cells originally derived from the first continuously human cervical-cultured carcinoma strain propagated and later commercialized. Transformed cell lines are indicative of their almost infinite availability but with the caveat of having retained very few of its original *in vivo* characteristics. The morphology a cell line assumes is reflected upon the tissue from which it was derived. Cells derived from solid tissue (e.g., cervix, kidney, lungs) tend to grow as monolayers whereas cell lines derived from blood (e.g., leukemias, lymphomas) tend to grow in suspension. *BME Earle's Salts* supports the growth and viability of normal and transformed cell lines in monolayer culture.

Cultured cells require a sterile environment and an optimal nutrient supply for growth and viability. Over the years variously defined basal media have been designed, developed, modified and enriched with a wide spectrum of constituents for supporting a vast range of cell types. Precise media formulations have been specifically developed by optimizing the concentrations of each and every component which performs a uniquely defined function. This cell culture medium, for all intents and purposes, has since been modified and enriched with a diverse complex of salt compounds along with other essential nutrients that segue into a final medium based upon application and technique.

At the minimum, Basal Cell Culture Media consists of amino acids, energy sources, inorganic salts, and vitamins among other nutrients. It is basically an unsupplemented medium which promotes the growth of many types of cells which do not require any special nutrients. Development of a Basal Culture Medium is a prerequisite for the attachment, spreading and growth of cells *in vitro*. To maximize success, the *in vitro* culture conditions are designed to mimic such crucial *in vivo* conditions of nutrition, osmolality, pH and temperature. Optimal and critical nutrient components including such inorganic salts (e.g.NaCl, KCl, $CaCl_2$), amino acids (e.g. Arginine, Histidine, Lysine),energy sources(e.g. Glucose),and vitamins(e.g. Nicotinimide, Thiamine, Riboflavin) are part and parcel that culminate in a perfect milieu for growth and viability.

Unlike the balanced salt solutions that form the basis of many complex media formulations and are utilized to maintain cells for the short term in a viable condition, BME is modified and enriched to promote the growth and viability of cells in culture. BME may be utilized for a broad variety of cell lines when properly supplemented.

These variegated components that constitute BME have been developed in order to fulfill the basic cell requirements for five basic and essential ions including: calcium, magnesium, phosphate, potassium and sodium and therefore contain various amounts of $CaCl_2$, KCl, $MgSO_4$, NaCl, $NaHCO_3$ and others comprising Earle's Salts. The key constituents of salts are the ions which function in osmolality whereas others such as Calcium and Magnesium are known, among other functions, to serve as cofactors for and support cell attachment and aggregation. Glucose serves as a major carbon and energy source and Phenol Red may serves as a pH indicator in specific cell culture media. BME also contains Sodium Bicarbonate which has an intimate relationship with and plays a major role with CO_2 by helping to maintain optimal physiological pH.

Some Predominant Characteristics of BME Medium Earle's Salts (10X) include:

- Liquid Formulation(10X)
- ***With*** Earle's Salts
- ***Without*** L-Glutamine
- ***Without*** Sodium Bicarbonate($NaHCO_3$)
- ***With*** Phenol Red($C_{19}H_{13}NaO_5S$) as pH indicator
- Sterile-Filtered(0.1µ)
- Cell Culture-Tested

Handling/Storage:
The product should be stored at 2-8°C. The medium should be warmed to room temperature prior to use. The product should not be left in the light for prolonged periods as it is light-sensitive. When stored in the dark under ideal conditions, the product is stable until the expiry date.

Instructions/Procedure for Preparation of Basal Medium Eagle (BME), Earle's Salts Base, (1 liter):

1) Using aseptic/sterile technique under a laminar-flow culture hood, and working according to established protocols:
2) Gently swirl the solution of each bottle to ensure uniformity after reading product label.
3) Wipe the outside of each bottle with a disinfectant solution such as 70% ethanol before use.
4) Take & Measure out 700 ml of Sterile Water (Cat. No.: 03-055-1).
5) Take & Measure out 100 ml BME (10X) without L-Glutamine, Without Sodium Bicarbonate (Cat. No.: 01-015-5)
6) Take & Measure out 20 ml L-Glutamine Solution 200mM(Cat No.: 03-020-1)
7) Take & Measure out 29.4 ml Sodium Bicarbonate Solution 7.5%(Cat No.: 03-040-1)
8) Take & Measure out 10 ml Penicillin-Streptomycin Solution(Cat No.: 03-031-1)
9) Add Sterile Water to obtain final volume and adjust pH if necessary.

Quality Control

Test	Specification
Cell Culture Test:	Test & Record
Cell Line:	A549
Endotoxins:	Test and Record
Osmolality(1:10):	280-315 mOsm/Kg
pH:	5.0-6.0
Sterility:	Sterile

Auxiliary Products

Product Name	Catalog Number	Storage Temperature
Basal Medium Eagle (BME), Earle's Salts Base, without L-Glutamine, without Sodium Bicarbonate	01-015-1	2-8°C
Minimum Essential Medium Eagle (MEM-E), Earle's Salts Base, without L-Glutamine	01-025-1	2-8°C
Earle's Balance Salt Solution 10X Conc., without Sodium Bicarbonate	02-010-5	Room Temperature (15-30°)
Earle's Balance Salt Solution without Phenol Red	02-011-1	Room Temperature (15-30°)
Earle's Balance Salt Solution without Phenol Red, without Sodium Bicarbonate	02-011-5	Room Temperature (15-30°)
L-Glutamine Solution 29.2mg/ml in Saline	03-020-1	-20°C
L-Alanyl-L-Glutamine Solution(A Dipeptide Substitute)	03-022-1	-20°C
Penicillin-Streptomycin Solution,10,000 units/ml Penicillin G Sodium Salt,10mg/ml Streptomycin	03-031-1	-20°C
Sterile Culture-Grade Water	03-055-1	Room Temperature (15-30°)
Fetal Bovine Serum	04-001-1	-20°C
Fetal Bovine Serum(Qualified for Human Embryonic Stem Cells)	04-002-1	-20°C
Adult Bovine Serum	04-003-1	-20°C
Serum-Free Cell Freezing Medium	05-065-1	2-8°C
Note: For a list of other Antibiotics, Serum, Reagents and Supplements, please refer to our Product Catalog/Product Profiles, Product Guides and Internet Site.		

References:

1) Current Edition Merck Index
2) Biological Industries(BI) Specifications
3) Darling, D.C. and Morgan, S.J. Animal Cells: Culture and Media, New York: John Wiley & Sons,1994

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