

## Description

Minimum Essential Medium (MEM)  $\alpha$  is widely used for mammalian cell culture as well as selection for transfected DHFR negative cells. MEM  $\alpha$  can be used with a variety of suspension and adherent mammalian cells, including keratinocytes, primary rat astrocytes, and human melanoma cells.

**This MEM  $\alpha$  is modified as follows:**

With

- Ribonucleosides
- Deoxyribonucleosides
- Phenol Red
- GlutaMAX™



### Using MEM $\alpha$

MEM  $\alpha$  is a modification of Minimum Essential Medium (MEM) that contains non-essential amino acids, sodium pyruvate, lipoic acid, vitamin B12, biotin, and ascorbic acid. MEM  $\alpha$  is available without nucleosides for use as a selection medium for DG44 and other DHFR negative cells. MEM  $\alpha$  with GlutaMAX™ supplement minimizes toxic ammonia build-up and improves cell viability and growth in an easy-to-use format. This product is made with Earle's salts.

### Contents and Storage

Storage conditions: 2-8° C. Protect from light

Shipping conditions: Ambient

Shelf life: 12 months from date of manufacture

## Formulation

| Components  | Molecular Weight | Concentration (mg/L) | mM           |
|---|------------------|----------------------|--------------|
| <b>Amino Acids</b>  |                  |                      |              |
| <b>Glycine</b>  | 75.0             | 50.0                 | 0.6666667    |
| <b>L-Alanine</b>  | 89.0             | 25.0                 | 0.28089887   |
| <b>L-Alanyl-L-Glutamine</b>   | 203.0            | 406.0                | 2.0          |
| <b>L-Arginine</b>   | 211.0            | 105.0                | 0.49763033   |
| <b>L-Asparagine-H2O</b>   | 132.0            | 50.0                 | 0.37878788   |
| <b>L-Aspartic acid</b>  | 133.0            | 30.0                 | 0.22556391   |
| <b>L-Cysteine hydrochloride</b>   | 121.0            | 100.0                | 0.8264463    |
| <b>L-Cystine</b>  | 313.0            | 31.0                 | 0.09904154   |
| <b>L-Glutamic Acid</b>  | 147.0            | 75.0                 | 0.5102041    |
| <b>L-Histidine</b>  | 155.0            | 31.0                 | 0.2          |
| <b>L-Isoleucine</b>   | 131.0            | 52.4                 | 0.4          |
| <b>L-Leucine</b>  | 131.0            | 52.4                 | 0.4          |
| <b>L-Lysine</b>   | 146.0            | 58.0                 | 0.39726028   |
| <b>L-Methionine</b>   | 149.0            | 15.0                 | 0.10067114   |
| <b>L-Phenylalanine</b>  | 165.0            | 32.0                 | 0.19393939   |
| <b>L-Proline</b>  | 115.0            | 40.0                 | 0.3478261    |
| <b>L-Serine</b>   | 105.0            | 25.0                 | 0.23809524   |
| <b>L-Threonine</b>  | 119.0            | 48.0                 | 0.40336135   |
| <b>L-Tryptophan</b>   | 204.0            | 10.0                 | 0.04901961   |
| <b>L-Tyrosine</b>   | 181.0            | 36.0                 | 0.19889502   |
| <b>L-Valine</b>   | 117.0            | 46.0                 | 0.3931624    |
| <b>Vitamins</b>   |                  |                      |              |
| <b>Ascorbic Acid</b>  | 176.0            | 50.0                 | 0.2840909    |
| <b>Biotin</b>   | 244.0            | 0.1                  | 4.0983607E-4 |
| <b>Choline chloride</b>   | 140.0            | 1.0                  | 0.007142857  |
| <b>D-Calcium pantothenate</b>   | 477.0            | 1.0                  | 0.002096436  |
| <b>Folic Acid</b>   | 441.0            | 1.0                  | 0.0022675737 |
| <b>Niacinamide</b>  | 122.0            | 1.0                  | 0.008196721  |
| <b>Pyridoxal hydrochloride</b>  | 204.0            | 1.0                  | 0.004901961  |
| <b>Riboflavin</b>   | 376.0            | 0.1                  | 2.6595744E-4 |
| <b>Thiamine hydrochloride</b>   | 337.0            | 1.0                  | 0.002967359  |
| <b>Vitamin B12</b>  | 1355.0           | 1.36                 | 0.0010036901 |
| <b>i-Inositol</b>   | 180.0            | 2.0                  | 0.011111111  |
| <b>Inorganic Salts</b>  |                  |                      |              |
| <b>Calcium Chloride (CaCl<sub>2</sub>-2H<sub>2</sub>O)</b>                        | 147.0            | 264.0                | 1.7959183    |
| <b>Magnesium Sulfate (MgSO<sub>4</sub>-7H<sub>2</sub>O)</b>                       | 246.0            | 200.0                | 0.8130081    |
| <b>Potassium Chloride (KCl)</b>   | 75.0             | 400.0                | 5.3333335    |
| <b>Sodium Bicarbonate (NaHCO<sub>3</sub>)</b>                                     | 84.0             | 2200.0               | 26.190475    |
| <b>Sodium Chloride (NaCl)</b>   | 58.0             | 6800.0               | 117.24138    |
| <b>Sodium Phosphate monobasic (NaH<sub>2</sub>PO<sub>4</sub>-2H<sub>2</sub>O)</b> | 156.0            | 158.0                | 1.0128205    |
| <b>Ribonucleosides</b>  |                  |                      |              |

|                             |       |        |             |
|-----------------------------|-------|--------|-------------|
| <b>Adenosine</b>            | 267.0 | 10.0   | 0.037453182 |
| <b>Cytidine</b>             | 243.0 | 10.0   | 0.041152265 |
| <b>Guanosine</b>            | 283.0 | 10.0   | 0.03533569  |
| <b>Uridine</b>              | 244.0 | 10.0   | 0.040983606 |
| Deoxyribonucleosides        |       |        |             |
| <b>2'Deoxyadenosine</b>     | 251.0 | 10.0   | 0.03984064  |
| <b>2'Deoxycytidine HCl</b>  | 264.0 | 10.0   | 0.03787879  |
| <b>2'Deoxyguanosine</b>     | 267.0 | 10.0   | 0.037453182 |
| <b>Thymidine</b>            | 242.0 | 10.0   | 0.041322313 |
| Other Components            |       |        |             |
| <b>D-Glucose (Dextrose)</b> | 180.0 | 1000.0 | 5.5555553   |
| <b>Lipoic Acid</b>          | 206.0 | 0.2    | 9.708738E-4 |
| <b>Phenol Red</b>           | 376.4 | 10.0   | 0.026567481 |
| <b>Sodium Pyruvate</b>      | 110.0 | 110.0  | 1.0         |

## Specifications

### General Specifications

#### General Specifications

|                           |                                   |
|---------------------------|-----------------------------------|
| Glutamine:                | <b>GlutaMAX™-I</b>                |
| Phenol Red Indicator:     | Phenol Red                        |
| Form:                     | Liquid                            |
| HEPES Buffer:             | No HEPES                          |
| Sodium Pyruvate Additive: | Sodium Pyruvate                   |
| Volume:                   | 500 ml                            |
| Glucose:                  | Low Glucose                       |
| Product Size:             | 500 mL                            |
| Serum Supplementation:    | Standard Serum<br>Supplementation |
| Green Features:           | Sustainable packaging             |
| Shipping Condition:       | Room Temperature                  |