

**Supplementary 1.****Comparison of glucose and amino acids composition between DMEM F-12 and MEM Alpha.**

| Components                                 | Concentration in DMEM F12 (mg/L) | Concentration in MEM Alpha (mg/L) | MEM Alpha/DMEM F12 |
|--------------------------------------------|----------------------------------|-----------------------------------|--------------------|
| <b>D-Glucose (Dextrose)</b>                | 3,151                            | 1,000                             | 0.32               |
| <b>Amino Acids</b>                         |                                  |                                   |                    |
| Glycine                                    | 18.75                            | 50                                | 2.6*               |
| L-Alanine                                  | 4.45                             | 25                                | 5.62*              |
| L-Arginine hydrochloride                   | 147.5                            | 105                               | 0.71               |
| L-Asparagine-H <sub>2</sub> O              | 7.5                              | 50                                | 6.67*              |
| L-Aspartic acid                            | 6.65                             | 30                                | 4.51*              |
| L-Cysteine hydrochloride-H <sub>2</sub> O  | 17.56                            | 100                               | 5.69*              |
| L-Cystine 2HCl                             | 31.29                            | 31                                | 0.99               |
| L-Glutamic Acid                            | 7.35                             | 75                                | 10.20*             |
| L-Glutamine                                | 365                              | 292                               | 0.8                |
| L-Histidine hydrochloride-H <sub>2</sub> O | 31.48                            | 31                                | 0.98               |
| L-Isoleucine                               | 54.47                            | 52.4                              | 0.96               |
| L-Leucine                                  | 59.05                            | 52                                | 0.88               |
| L-Lysine hydrochloride                     | 91.25                            | 73                                | 0.8                |
| L-Methionine                               | 17.24                            | 15                                | 0.87               |
| L-Phenylalanine                            | 35.48                            | 32                                | 0.9                |
| L-Proline                                  | 17.25                            | 40                                | 2.32*              |
| L-Serine                                   | 26.25                            | 25                                | 0.95               |
| L-Threonine                                | 53.45                            | 48                                | 0.9                |
| L-Tryptophan                               | 9.02                             | 10                                | 1.11               |
| L-Tyrosine disodium salt dihydrate         | 55.79                            | 52                                | 0.93               |
| L-Valine                                   | 52.85                            | 46                                | 0.87               |

|  |                                     |
|--|-------------------------------------|
|  | Essential amino acids               |
|  | Conditionally essential amino acids |
|  | Non essential amino acids           |