**Table S1.** Components present in the defined chemical medium EMF12

|  |  |  |  |
| --- | --- | --- | --- |
| **Amino acids** | | **Vitamins/Cofactors** | |
| **Component** | **Concentration (mM)** | **Component** | **Concentration (mM)** |
| L-arginine | 1 | Choline | 10-1 |
| L-histidine | 10-1 | Biotin | 3 x 10-5 |
| L-Isoleucine | 3 x 10-2 | Pantothenic acid | 10-3 |
| L-leucine | 10-1 | Niacinamide | 3 x 10-4 |
| L-lysine | 2 x 10-2 | Pyridoxine | 3 x 10-4 |
| L-methionine | 3 x 10-2 | Thiamine | 10-3 |
| L-phenylalanine | 3 x 10-2 | Folic acid | 3 x 10-3 |
| L-serine | 10-1 | Vitamin B12 | 10-3 |
| L-threonine | 10-1 | *Myo*-inositol | 10-1 |
| L-tryptophan | 10-2 |  |  |
| L-tyrosine | 3 x 10-2 |  |  |
| L-valine | 10-1 | **Metals** | |
| L-glutamine | 1 | **Component** | **Concentration (mM)** |
| L-cysteine | 2 x 10-1 | FeCl2 · 6H2O | 7.5 x 10-2 |
| L-asparagine | 10-1 | MgCl2 · 6H2O | 6 x 10-1 |
| L-proline | 3 x 10-1 | CaCl2· 2H2O | 3 x 10-1 |
| L-alanine | 10-1 | CuSO4· 5H2O | 10-5 |
| L-aspartic acid | 10-1 | ZnSO4· 7H2O | 3 x 10-3 |
| L-glutamic acid | 10-1 | FeCl2 · 6H2O | 7.5 x 10-2 |
| L-glycine | 10-1 |  |  |
| **Salts** | | **Other** | |
| **Component** | **Concentration (mM)** | **Component** | **Concentration (mM)** |
| KCl | 3 | Hypoxanthine*a* | 6 x 10-2 |
| NaCl | 104 | Thymidine | 3 x 10-3 |
| Na2HPO4 | 1 | Pyruvate | 1 |
| NaHCO3 | 14 | β-cyclodextrin | 3.26 |
|  |  | Phenol red | 3 x 10-3 |

*a* Various purine sources were substituted for hypoxanthine in this study.