

Amino Acids	MW	DMEM/F12 (mg/L)	DMEM (mg/L)
Glycine	75	18.75	30
<i>L-Arginine hydrochloride</i>	211	147.5	84
L-Cystine 2HCl	313	31.29	63
L-Glutamine	146	580*	580
L-Histidine hydrochloride-H ₂ O	210	31.48	42
L-Isoleucine	131	54.47	105
L-Leucine	131	59.05	105
L-Lysine hydrochloride	183	91.25	146
L-Methionine	149	17.24	30
L-Phenylalanine	165	35.48	66
L-Serine	105	26.25	42
L-Threonine	119	53.45	95
L-Tryptophan	204	9.02	16
L-Tyrosine [†]	181	38.7	72
L-Valine	117	25.85	94
L-Cysteine hydrochloride-H ₂ O	176	17.56	
L-Glutamic Acid	147	7.35	
L-Proline	115	17.25	
L-Alanine	89	4.45	
L-Asparagine-H ₂ O	150	7.5	
L-Aspartic acid	133	6.65	
Vitamins			
<i>Choline chloride</i>	140	8.98	4
D-Calcium pantothenate	477	2.24	4
Folic Acid	441	2.65	4
Niacinamide	122	2.02	4
Pyridoxine hydrochloride	206	2	4
Riboflavin	376	0.219	0.4
Thiamine hydrochloride	337	2.17	4
<i>i-Inositol</i>	180	12.6	7.2
Biotin	244	0.0035	
Vitamin B12	1355	0.68	
Inorganic Salts			
Calcium Chloride (CaCl ₂) (anhyd.)	111	116.6	264
Ferric Nitrate (Fe(NO ₃) ₃ ·9H ₂ O)	404	0.05	0.1
Magnesium Sulfate (MgSO ₄ ·7H ₂ O)	246	100	200
Potassium Chloride (KCl)	75	311.8	400
Sodium Bicarbonate (NaHCO ₃)	84	2438	3700
<i>Sodium Chloride (NaCl)</i>	58	6995.5	6400
Sodium Phosphate monobasic (NaH ₂ PO ₄ ·H ₂ O)	138	62.5	141
Cupric sulfate (CuSO ₄ ·5H ₂ O)	250	0.0013	
Ferric sulfate (FeSO ₄ ·7H ₂ O)	278	0.417	
Magnesium Chloride (MgCl ₂ ·6H ₂ O)	203	61	
Sodium Phosphate dibasic (Na ₂ HPO ₄ ·7H ₂ O)	268	134	
Zinc sulfate (ZnSO ₄ ·7H ₂ O)	288	0.432	
Other Components			
D-Glucose (Dextrose)	180	4500*	4500 [‡] (1000)
Phenol Red	376.4	8.1	15
Sodium Pyruvate	110	55	110 [‡] (0)
Hypoxanthine Na	159	2.39	
Linoleic Acid	280	0.042	
Lipoic Acid	206	0.105	
Putrescine 2HCl	161	0.081	
Thymidine	242	0.365	

* Glutamine and glucose levels shown are the corrected values used in this study.

† This is the effective concentration of L-Tyrosine. In commercial DMEM/F12 L-Tyrosine is actually L-Tyrosine disodium salt dihydrate at 55.79mg/L (MW 261).

‡ Indicates components with alternative concentrations in brackets. In our study 3 versions of DMEM medium were used: High glucose i.e 4.5g/L no pyruvate (DH), high glucose with 1mM pyruvate (DH+P), and low glucose i.e 1g/L with pyruvate (DL+P). Alternative concentrations are included in brackets. Actual media purchased are DMEM/F12 -L-Glut #21331 (we corrected for glutamine and glucose), DMEM high glucose with pyruvate #41966, DMEM high glucose without pyruvate #41965 and DMEM low glucose with pyruvate #31885.

Italics indicate components that exist at higher concentrations in DMEM/F12 than in DMEM medium. All other common components exist at lower concentration in DMEM/F12.

Supplementary Table 1. Comparison of components of DMEM/F12 and DMEM with pyruvate used in this study.