

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO  
CELL CULTURE FACILITY  
Media Production Formulations

**DMEM, Low Glucose/Ham's F-12 50% Mixture w/o  
HEPES, with NEAA Medium  
(DME H-16/F-12)**

**CCF Product Code Number: CCFAA009** (Old Code AA800)

Compound	Formula	mg/L
<b>Part A: Inorganic Salts</b>		
Calcium chloride (anhydrous)	CaCl <sub>2</sub>	116.65
Cupric sulfate·5H <sub>2</sub> O	CuSO <sub>4</sub> ·5H <sub>2</sub> O	0.001
Ferric nitrate·9H <sub>2</sub> O	Fe(NO <sub>3</sub> ) <sub>3</sub> ·9H <sub>2</sub> O	0.05
Ferrous sulfate·7H <sub>2</sub> O	FeSO <sub>4</sub> ·7H <sub>2</sub> O	0.42
Magnesium chloride·6H <sub>2</sub> O	MgCl <sub>2</sub> ·6H <sub>2</sub> O	61.00
Magnesium sulfate·7H <sub>2</sub> O	MgSO <sub>4</sub> ·7H <sub>2</sub> O	100.00
Potassium chloride	KCl	311.82
Sodium chloride	NaCl	7000.00
Sodium phosphate, (anhydrous)	Na <sub>2</sub> HP0 <sub>4</sub>	70.99
Sodium phosphate, monobasic·H <sub>2</sub> O	NaH <sub>2</sub> P0 <sub>4</sub> ·H <sub>2</sub> O	62.50
Zinc sulfate·7H <sub>2</sub> O	ZnSO <sub>4</sub> ·7H <sub>2</sub> O	0.43
<b>Part B: Other components</b>		
D-Glucose	C <sub>6</sub> H <sub>12</sub> O <sub>6</sub>	1401.00
Sodium pyruvate	C <sub>3</sub> H <sub>3</sub> O <sub>3</sub> ·Na	110.00
Phenol Red	C <sub>19</sub> H <sub>13</sub> NaO <sub>5</sub> S	8.12
Sodium bicarbonate	NaHCO <sub>3</sub>	1200.00
<b>Part C: Amino Acids</b>		
L-Alanine	C <sub>3</sub> H <sub>7</sub> NO <sub>2</sub>	4.46
L-Arginine hydrochloride	C <sub>6</sub> H <sub>14</sub> N <sub>4</sub> O <sub>2</sub> ·HCl	147.35
L-Asparagine·H <sub>2</sub> O	C <sub>4</sub> H <sub>8</sub> N <sub>2</sub> O <sub>3</sub> ·H <sub>2</sub> O	7.50
L-Aspartic acid	C <sub>4</sub> H <sub>7</sub> NO <sub>4</sub>	6.65

L-Cysteine hydrochloride·H <sub>2</sub> O	C <sub>3</sub> H <sub>7</sub> NO <sub>2</sub> S·H <sub>2</sub> O	17.56
L-Cystine	C <sub>6</sub> H <sub>12</sub> N <sub>2</sub> O <sub>4</sub> S <sub>2</sub>	24.70
L-Glutamine	C <sub>5</sub> H <sub>10</sub> N <sub>2</sub> O <sub>3</sub>	365.10
L-Glutamic acid	C <sub>5</sub> H <sub>9</sub> NO <sub>4</sub>	7.35
Glycine	C <sub>2</sub> H <sub>5</sub> NO <sub>2</sub>	18.76
L-Histidine hydrochloride·H <sub>2</sub> O	C <sub>6</sub> H <sub>9</sub> N <sub>3</sub> O <sub>2</sub> ·HCl·H <sub>2</sub> O	31.48
L-Isoleucine	C <sub>6</sub> H <sub>13</sub> NO <sub>2</sub>	54.37
L-Leucine	C <sub>6</sub> H <sub>13</sub> NO <sub>2</sub>	58.96
L-Lysine·HCl	C <sub>6</sub> H <sub>14</sub> N <sub>2</sub> O <sub>2</sub> ·HCl	91.37
L-Methionine	C <sub>5</sub> H <sub>11</sub> NO <sub>2</sub> S	17.24
L-Phenylalanine	C <sub>9</sub> H <sub>11</sub> NO <sub>2</sub>	35.48
L-Proline	C <sub>5</sub> H <sub>9</sub> NO <sub>2</sub>	17.26
L-Serine	C <sub>3</sub> H <sub>7</sub> NO <sub>3</sub>	26.26
L-Threonine	C <sub>4</sub> H <sub>9</sub> NO <sub>3</sub>	53.56
L-Tryptophan	C <sub>11</sub> H <sub>12</sub> N <sub>2</sub> O <sub>2</sub>	9.02
L-Tyrosine	C <sub>9</sub> H <sub>11</sub> NO <sub>3</sub>	38.72
L-Valine	C <sub>5</sub> H <sub>11</sub> NO <sub>2</sub>	52.66

#### **Part D: Vitamins**

Biotin	C <sub>10</sub> H <sub>16</sub> N <sub>2</sub> O <sub>3</sub> S	0.0037
D-Calcium pantothenate	C <sub>18</sub> H <sub>32</sub> CaN <sub>2</sub> O <sub>10</sub>	2.12
Choline chloride	C <sub>5</sub> H <sub>14</sub> ClNO	8.98
Folic acid	C <sub>19</sub> H <sub>19</sub> N <sub>7</sub> O <sub>6</sub>	2.66
i-Inositol	C <sub>6</sub> H <sub>12</sub> O <sub>6</sub>	12.51
Niacinamide	C <sub>6</sub> H <sub>6</sub> N <sub>2</sub> O	2.02
Pyridoxal hydrochloride	C <sub>8</sub> H <sub>9</sub> NO <sub>3</sub> ·HCl	2.00
Pyridoxine hydrochloride	C <sub>8</sub> H <sub>11</sub> NO <sub>3</sub> ·HCl	0.031
Riboflavin	C <sub>17</sub> H <sub>20</sub> N <sub>4</sub> O <sub>6</sub>	0.219
Thiamine HCl	C <sub>12</sub> H <sub>17</sub> ClN <sub>4</sub> OS·HCl	2.17
Vitamin B <sub>12</sub>	C <sub>63</sub> H <sub>88</sub> CoN <sub>14</sub> O <sub>14</sub> P	0.68

#### Part E: Other chemicals

Hypoxanthine	C <sub>5</sub> H <sub>4</sub> N <sub>4</sub> O	2.700
Linoleic acid	C <sub>18</sub> H <sub>32</sub> O <sub>2</sub>	0.042
Lipoic acid	C <sub>8</sub> H <sub>14</sub> O <sub>2</sub> S <sub>2</sub>	0.103
Putrescine-HCl	C <sub>4</sub> H <sub>14</sub> Cl <sub>2</sub> N <sub>2</sub> ·HCl	0.081
Thymidine	C <sub>10</sub> H <sub>14</sub> N <sub>2</sub> O <sub>5</sub>	0.360

**pH: 7.20 Osmolarity: 284-300 mOsm**