

Product Information

Dulbecco's Modified Eagle's Medium (DME)

Many modifications of Eagle's Medium have been developed since the original formulation appeared in the literature. Among the most widely used of these modifications is Dulbecco's Modified Eagle's Medium (DME).

DME is a modification of Basal Medium Eagle (BME) that contains a 4-fold higher concentration of amino acids and vitamins, as well as additional supplementary components. The original DME formula, first reported for culturing embryonic mouse cells, contained 1,000 mg/L of glucose. An alteration with 4,500 mg/L glucose is optimal in cultivating certain cell types.

| | D0422 | D1145 | D0819 | D1152 | D2429 | D2902 | D5030 | D5523 |
|---|---------|---------|---------|----------|-------------|----------|----------|----------|
| | [1·] | [1·] | [1·] | [powder] | [10·] | [powder] | [powder] | [powder] |
| COMPONENT | g/L | g/L | g/L | g/L | g/L | g/L | g/L | g/L |
| Inorganic Salts | | | | | | | | |
| CaCl ₂ | 0.265 | 0.265 | 0.2 | 0.2 | 2.65 | 0.2 | 0.2 | 0.2 |
| Fe(NO ₃) ₃ · 9H ₂ O | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.001 | 0.0001 | 0.0001 | 0.0001 |
| MgSO ₄ | 0.09767 | 0.09767 | 0.09767 | 0.09767 | 0.9767 | 0.09767 | 0.09767 | 0.09767 |
| KCl | 0.4 | 0.4 | 0.4 | 0.4 | 4 | 0.4 | 0.4 | 0.4 |
| NaHCO ₃ | 3.7 | 3.7 | 3.7 | — | — | — | — | — |
| NaCl | 6.4 | 6.4 | 6.4 | 4.4 | 64 | 6.4 | 6.4 | 6.4 |
| NaH ₂ PO ₄ | 0.109 | 0.109 | 0.109 | 0.109 | 1.09 | 0.109 | 0.109 | 0.109 |
| Amino Acids | | | | | | | | |
| L-Alanyl-L-Glutamine | — | — | 0.869 | — | — | — | — | — |
| L-Arginine · HCl | 0.084 | 0.084 | 0.084 | 0.084 | 0.84 | 0.084 | 0.084 | 0.084 |
| L-Cystine · 2HCl | — | 0.0626 | 0.0626 | 0.0626 | 0.626 | 0.0626 | 0.0626 | 0.0626 |
| L-Glutamine | — | — | — | 0.584 | — | 0.584 | — | 0.584 |
| Glycine | 0.03 | 0.03 | 0.03 | 0.03 | 0.3 | 0.03 | 0.03 | 0.03 |
| L-Histidine · HCl · H ₂ O | 0.042 | 0.042 | 0.042 | 0.042 | 0.42 | 0.042 | 0.042 | 0.042 |
| L-Isoleucine | 0.105 | 0.105 | 0.105 | 0.105 | 1.05 | 0.105 | 0.105 | 0.105 |
| L-Leucine | 0.105 | 0.105 | 0.105 | 0.105 | 1.05 | 0.105 | 0.105 | 0.105 |
| L-Lysine · HCl | 0.146 | 0.146 | 0.146 | 0.146 | 1.46 | 0.146 | 0.146 | 0.146 |
| L-Methionine | — | 0.03 | 0.03 | 0.03 | 0.3 | 0.03 | 0.03 | 0.03 |
| L-Phenylalanine | 0.066 | 0.066 | 0.066 | 0.066 | 0.66 | 0.066 | 0.066 | 0.066 |
| L-Serine | 0.042 | 0.042 | 0.042 | 0.042 | 0.42 | 0.042 | 0.042 | 0.042 |
| L-Threonine | 0.095 | 0.095 | 0.095 | 0.095 | 0.95 | 0.095 | 0.095 | 0.095 |
| L-Tryptophan | 0.016 | 0.016 | 0.016 | 0.016 | 0.16 | 0.016 | 0.016 | 0.016 |
| L-Tyrosine · 2Na · 2H ₂ O | 0.12037 | 0.12037 | 0.10379 | 0.10379 | — | 0.10379 | 0.10379 | 0.10379 |
| L-Tyrosine | — | — | — | — | 1.13033 | — | — | — |
| L-Valine | 0.094 | 0.094 | 0.094 | 0.094 | 0.94 | 0.094 | 0.094 | 0.094 |
| Vitamins | | | | | | | | |
| Choline Chloride | 0.004 | 0.004 | 0.004 | 0.004 | 0.04 | 0.004 | 0.004 | 0.004 |
| Folic Acid | 0.004 | 0.004 | 0.004 | 0.004 | — | 0.004 | 0.004 | 0.004 |
| <i>myo</i> -Inositol | 0.0072 | 0.0072 | 0.0072 | 0.0072 | 0.072 | 0.0072 | 0.0072 | 0.0072 |
| Niacinamide | 0.004 | 0.004 | 0.004 | 0.004 | 0.04 | 0.004 | 0.004 | 0.004 |
| D-Pantothenic Acid · ½Ca | 0.004 | 0.004 | 0.004 | 0.004 | 0.04 | 0.004 | 0.004 | 0.004 |
| Pyridoxal · HCl | — | — | — | 0.004 | — | 0.004 | 0.004 | 0.004 |
| Pyridoxine · HCl | 0.00404 | 0.00404 | 0.00404 | — | 0.04 | — | — | — |
| Riboflavin | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.004 | 0.0004 | 0.0004 | 0.0004 |
| Thiamine · HCl | 0.004 | 0.004 | 0.004 | 0.004 | 0.04 | 0.004 | 0.004 | 0.004 |
| Other | | | | | | | | |
| D-Glucose | 4.5 | 4.5 | 4.5 | 4.5 | 10 | 1.0 | — | 1.0 |
| HEPES | — | — | — | 5.958 | — | — | — | — |
| Phenol Red · Na | 0.0159 | — | 0.0159 | 0.0159 | 0.159 | — | — | 0.0159 |
| Pyruvic Acid · Na | 0.11 | — | — | — | 1.1 | 0.11 | — | 0.11 |
| ADD | | | | | | | | |
| Glucose | — | — | — | — | — | — | 1.0 | — |
| L-Glutamine | 0.584 | 0.584 | — | — | 0.584 at 1· | — | 0.584 | — |
| NaHCO ₃ | — | — | — | 3.7 | 3.7 at 1· | 3.7 | 3.7 | 3.7 |

| | D5546 | D5648 | D5671 | D5796 | D5921 | D6046 | D6171 | D6429 |
|---|---------|----------|---------|---------|---------|---------|---------|---------|
| | [1.] | [powder] | [1.] | [1.] | [1.] | [1.] | [1.] | [1.] |
| COMPONENT | g/L | g/L | g/L | g/L | g/L | g/L | g/L | g/L |
| Inorganic Salts | | | | | | | | |
| CaCl ₂ | 0.2 | 0.2 | 0.2 | 0.2 | 0.265 | 0.2 | 0.0265 | 0.2 |
| Fe(NO ₃) ₃ • 9H ₂ O | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |
| MgSO ₄ | 0.09767 | 0.09767 | 0.09767 | 0.09767 | 0.09767 | 0.09767 | 0.09767 | 0.09767 |
| KCl | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| NaHCO ₃ | 3.7 | — | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 |
| NaCl | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 4.4 | 6.4 |
| NaH ₂ PO ₄ | 0.109 | 0.109 | 0.109 | 0.109 | 0.109 | 0.109 | 0.109 | 0.109 |
| Amino Acids | | | | | | | | |
| L-Alanyl-L-Glutamine | — | — | — | — | — | — | — | — |
| L-Arginine • HCl | 0.084 | 0.084 | 0.084 | 0.084 | 0.084 | 0.084 | 0.084 | 0.084 |
| L-Cysteine • 2HCl | 0.0626 | 0.0626 | 0.0626 | 0.0626 | 0.0626 | 0.0626 | 0.0626 | 0.0626 |
| L-Glutamine | — | 0.584 | — | 0.584 | — | 0.584 | — | 0.584 |
| Glycine | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| L-Histidine • HCl • H ₂ O | 0.042 | 0.042 | 0.042 | 0.042 | 0.042 | 0.042 | 0.042 | 0.042 |
| L-Isoleucine | 0.105 | 0.105 | 0.105 | 0.105 | 0.105 | 0.105 | 0.105 | 0.105 |
| L-Leucine | 0.105 | 0.105 | 0.105 | 0.105 | 0.105 | 0.105 | 0.105 | 0.105 |
| L-Lysine • HCl | 0.146 | 0.146 | 0.146 | 0.146 | 0.146 | 0.146 | 0.146 | 0.146 |
| L-Methionine | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| L-Phenylalanine | 0.066 | 0.066 | 0.066 | 0.066 | 0.066 | 0.066 | 0.066 | 0.066 |
| L-Serine | 0.042 | 0.042 | 0.042 | 0.042 | 0.042 | 0.042 | 0.042 | 0.042 |
| L-Threonine | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 |
| L-Tryptophan | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| L-Tyrosine • 2Na • 2H ₂ O | 0.10379 | 0.10379 | 0.10379 | 0.10379 | 0.12037 | 0.10379 | 0.10379 | 0.10379 |
| L-Valine | 0.094 | 0.094 | 0.094 | 0.094 | 0.094 | 0.094 | 0.094 | 0.094 |
| Vitamins | | | | | | | | |
| Choline Chloride | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| Folic Acid | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| <i>myo</i> -Inositol | 0.0072 | 0.0072 | 0.0072 | 0.0072 | 0.0072 | 0.0072 | 0.0072 | 0.0072 |
| Niacinamide | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| D-Pantothenic Acid • ½Ca | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| Pyridoxal • HCl | — | 0.004 | — | — | — | — | — | — |
| Pyridoxine • HCl | 0.00404 | — | 0.00404 | 0.00404 | 0.00404 | 0.00404 | 0.00404 | 0.00404 |
| Riboflavin | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 |
| Thiamine • HCl | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| Other | | | | | | | | |
| D-Glucose | 1.0 | 4.5 | 4.5 | 4.5 | 1.0 | 1.0 | 4.5 | 4.5 |
| HEPES | — | — | — | — | — | — | 5.958 | — |
| Phenol Red • Na | 0.0159 | 0.0159 | 0.0159 | 0.0159 | — | 0.0159 | 0.0159 | 0.0159 |
| Pyruvic Acid • Na | 0.11 | — | — | — | — | 0.11 | — | 0.11 |
| ADD | | | | | | | | |
| Glucose | — | — | — | — | — | — | — | — |
| L-Glutamine | 0.584 | — | 0.584 | — | 0.584 | — | 0.584 | — |
| NaHCO ₃ | — | 3.7 | — | — | — | — | — | — |

| | D6546 | D7777 | D9443 | D0572 | D0822 |
|---|--------------|--------------|--------------|--------------|--------------|
| | [1·] | [powder] | [1·] | [1·] | [1·] |
| COMPONENT | g/L | g/L | g/L | g/L | g/L |
| Inorganic Salts | | | | | |
| CaCl ₂ | 0.2 | 0.2 | 0.2 | 0.265 | 0.2 |
| Fe(NO ₃) ₃ • 9H ₂ O | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |
| MgSO ₄ | 0.09767 | 0.09767 | 0.09767 | 0.09767 | 0.09767 |
| KCl | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| NaHCO ₃ | 3.7 | — | 3.7 | 3.7 | 3.7 |
| NaCl | 6.4 | 6.4 | 6.4 | 4.4 | 6.4 |
| NaH ₂ PO ₄ | 0.109 | 0.109 | 0.109 | 0.109 | 0.109 |
| Amino Acids | | | | | |
| L-Alanyl-L-Glutamine | — | — | — | 0.869 | 0.868 |
| L-Arginine • HCl | 0.084 | 0.084 | — | 0.084 | 0.084 |
| L-Cysteine • 2HCl | 0.0626 | 0.0626 | 0.0626 | 0.0626 | 0.0626 |
| L-Glutamine | — | 0.584 | 0.584 | — | — |
| Glycine | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| L-Histidine • HCl • H ₂ O | 0.042 | 0.042 | 0.042 | 0.042 | 0.042 |
| L-Isoleucine | 0.105 | 0.105 | 0.105 | 0.105 | 0.105 |
| L-Leucine | 0.105 | 0.105 | — | 0.105 | 0.105 |
| L-Lysine • HCl | 0.146 | 0.146 | — | 0.146 | 0.146 |
| L-Methionine | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| L-Phenylalanine | 0.066 | 0.066 | 0.066 | 0.066 | 0.066 |
| L-Serine | 0.042 | 0.042 | 0.042 | 0.042 | 0.042 |
| L-Threonine | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 |
| L-Tryptophan | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| L-Tyrosine • 2Na • 2H ₂ O | 0.10379 | 0.10379 | — | 0.10379 | 0.10379 |
| L-Tyrosine | — | — | 0.10379 | — | — |
| L-Valine | 0.094 | 0.094 | 0.094 | 0.094 | 0.094 |
| Vitamins | | | | | |
| Choline Chloride | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| Folic Acid | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| <i>myo</i> -Inositol | 0.0072 | 0.0072 | 0.0072 | 0.0072 | 0.0072 |
| Niacinamide | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| D-Pantothenic Acid • ½Ca | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| Pyridoxal • HCl | — | 0.004 | — | — | — |
| Pyridoxine • HCl | 0.004 | — | 0.004 | 0.004 | 0.004 |
| Riboflavin | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 |
| Thiamine • HCl | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| Other | | | | | |
| D-Glucose | 4.5 | 4.5 | 1.0 | 4.5 | 4.5 |
| HEPES | — | — | — | 5.958 | — |
| Phenol Red • Na | 0.0159 | 0.0159 | — | 0.0159 | 0.0159 |
| Pyruvic Acid • Na | 0.11 | 0.11 | — | — | 0.11 |
| ADD | | | | | |
| NaHCO ₃ | — | 3.7 | — | — | — |
| L-Glutamine | 0.584 | — | — | 0.584 | — |
| Glucose | — | — | — | — | — |

References

1. Dulbecco, R., and Freeman, G., Plaque Production by the Polyoma Virus. *Virology*, **8**, 396-397 (1959).
2. Smith, J.D., Freeman, G., Vogt, M., and Dulbecco, R., The Nucleic Acid of Polyoma. *Virus*, **12**, 185-196 (1960).
3. Morton, H.J., A Survey of Commercially Available Tissue Culture Media. *In Vitro*, **6**, 89 (1970).
4. Rutzky, L.P., and Pumper, R.W., Supplement to a Survey of Commercially Available Tissue Culture Media (1970). *In Vitro*, **9**, 468 (1974).