

**Medium 199**  
w/ Earle's Salts w/o L-Glutamine

**CAT N°:** ISL0356-500

**Colour:** Red, clear solution

**pH:** 7.3 ± 0.3

**Osmolality:** 287 mOsm/kg ± 10%

**Endotoxin:** < 1 EU/ml

**Sterility tests:**

- Bacteria in aerobic and anaerobic conditions
- Fungi and yeasts

**Cell Growth test:** Not applicable

**Other tests:** Not applicable **Recommended use:**

- Respect storage conditions of the product
- Do not use the product after its expiry date
- Store product in an area protected from light (not necessary for saline solutions).
- Manipulate the product in aseptic conditions (e.g.: under laminar air flow)
- Wear clothes adapted to the manipulation of the product to avoid contamination (e.g.: gloves, mask, hygiene cap, overall...)
- Sterile supplements (serum,...) should be aseptically added to sterile medium. The nature of the supplements may affect storage conditions and shelf life of the medium.

The product is intended to be used in vitro for research or further manufacturing only and not for use as an Active Pharmaceutical Ingredient or food or animal feed.

**Application:**

A long-term cultivation of cells required addition of a serum. When properly supplemented, Medium 199 has broad species applicability, particularly for cultivation of non-transformed cells. It is widely used in virology, vaccine production and in vitro cultivation of primary explants of mouse pancreatic epithelial and rat lens tissues.

**Uses:**

Add 3.4 ml/l of L-Glutamine 200 mM before using this medium. IS also recommend the addition of 10% of Fetal Bovine Serum in the medium.

**Signs of Deterioration:**

The medium should be clear and free of particulate and flocculent material.  
Do not use if the medium is cloudy or contains precipitate.

Other evidence of deterioration may include degradation of physical or performance characteristics.

**Remarks:** Not applicable

**Storage conditions:** +2°C to +8°C, protected from light

**Shelf life:** 24 months

**Composition:** Displayed on website; also available on request

**For Research use only**  
**IMMUNOLOGICAL SCIENCES**

Web-site: [www.immunologicalsciences.com](http://www.immunologicalsciences.com) - E-Mail: [info@immunologicalsciences.com](mailto:info@immunologicalsciences.com)

# COMPOSITION

## Medium 199

| CAS number | ISISL0330<br>Liquid<br>mg/l | ISL0355<br>Liquid<br>mg/l | ISL0356<br>Liquid<br>mg/l | ISP0410<br>Powder<br>mg/l | ISP0420<br>Powder<br>mg/l | ISP0425<br>Powder<br>mg/l | ISL0361<br>Liquid<br>mg/l |
|------------|-----------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
|------------|-----------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|

### Amino Acids

|                                           |             |       |       |       |       |       |       |       |
|-------------------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|
| Glycine                                   | 56-40-6     | 50    | 50    | 50    | 50    | 50    | 50    | 50    |
| L-Alanine                                 | 56-41-7     | 50    | 50    | 50    | 50    | 50    | 50    | 50    |
| L-Alanyl-L-Glutamine (Glutamine stable)   | 39537-23-0  | /     | /     | /     | /     | /     | /     | 100   |
| L-Arginine Monohydrochloride              | 1119-34-2   | 70    | 70    | 70    | 70    | 70    | 70    | 70    |
| L-Aspartic Acid                           | 56-84-8     | 60    | 60    | 60    | 60    | 60    | 60    | 60    |
| L-Cysteine Monohydrochloride Monohydrate  | 7048-04-6   | 0,11  | 0,11  | 0,11  | 0,11  | 0,11  | 0,11  | 0,11  |
| L-Cystine Dihydrochloride                 | 30925-07-6  | 26    | 26    | 26    | 26    | 26    | 26    | 26    |
| L-Glutamic Acid                           | 56-86-0     | 133,6 | 133,6 | 133,6 | 133,6 | 133,6 | 133,6 | 133,6 |
| L-Glutamine                               | 56-85-9     | 100   | 100   | /     | /     | 100   | 100   | /     |
| L-Histidine Monohydrochloride Monohydrate | 5934-29-2   | 21,88 | 21,88 | 21,88 | 21,88 | 21,88 | 21,88 | 21,88 |
| L-Hydroxy-L-Proline                       | 51-35-4     | 10    | 10    | 10    | 10    | 10    | 10    | 10    |
| L-Isoleucine                              | 73-32-5     | 40    | 40    | 40    | 40    | 40    | 40    | 40    |
| L-Leucine                                 | 61-90-5     | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L-Lysine Monohydrochloride                | 657-27-2    | 70    | 70    | 70    | 70    | 70    | 70    | 70    |
| L-Methionine                              | 63-68-3     | 30    | 30    | 30    | 30    | 30    | 30    | 30    |
| L-Phenylalanine                           | 63-91-2     | 50    | 50    | 50    | 50    | 50    | 50    | 50    |
| L-Proline                                 | 147-85-3    | 40    | 40    | 40    | 40    | 40    | 40    | 40    |
| L-Serine                                  | 56-45-1     | 50    | 50    | 50    | 50    | 50    | 50    | 50    |
| L-Threonine                               | 72-19-5     | 60    | 60    | 60    | 60    | 60    | 60    | 60    |
| L-Tryptophan                              | 73-22-3     | 20    | 20    | 20    | 20    | 20    | 20    | 20    |
| L-Tyrosine Disodium Salt Dihydrate        | 122666-87-9 | 57,66 | 57,66 | 57,66 | 57,66 | 57,66 | 57,66 | 57,66 |
| L-Valine                                  | 72-18-4     | 50    | 50    | 50    | 50    | 50    | 50    | 50    |

### Inorganic Salts

|                                         |            |       |       |       |       |       |       |       |
|-----------------------------------------|------------|-------|-------|-------|-------|-------|-------|-------|
| Calcium Chloride Dihydrate              | 10035-04-8 | 185   | 265   | 265   | 185   | 265   | 265   | 265   |
| Ferric Nitrate Nonahydrate              | 7782-61-8  | 0,72  | 0,72  | 0,72  | 0,72  | 0,72  | 0,72  | 0,72  |
| Magnesium Sulfate Anhydrous             | 7487-88-9  | 97,67 | 97,67 | 97,67 | 97,67 | 97,67 | 97,67 | 97,67 |
| Potassium Chloride                      | 7447-40-7  | 400   | 400   | 400   | 400   | 400   | 400   | 400   |
| Potassium Phosphate Monobasic Anhydrous | 7778-77-0  | 60    | /     | /     | 60    | /     | /     | /     |
| Sodium Acetate Anhydrous                | 127-09-3   | 50    | 50    | 50    | 50    | 50    | 50    | 50    |
| Sodium Bicarbonate                      | 144-55-8   | 350   | 1250  | 2200  | /     | /     | /     | 2200  |
| Sodium Chloride                         | 7647-14-5  | 8000  | 6800  | 6800  | 8000  | 6800  | 6000  | 6000  |
| Sodium Phosphate Dibasic Anhydrous      | 7558-79-4  | 47,88 | /     | /     | 47,88 | /     | /     | /     |
| Sodium Phosphate Monobasic Anhydrous    | 7558-80-7  | /     | 122   | 122   | /     | 122   | 122   | 122   |

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# COMPOSITION

## Medium 199 (following)

|          | CAS<br>number                               | ISL0330<br>Liquid<br>mg/l | ISL0355<br>Liquid<br>mg/l | ISL0356<br>Liquid<br>mg/l | ISP0410<br>Powder<br>mg/l | ISP0420<br>Powder<br>mg/l | ISP0425<br>Powder<br>mg/l | ISL0361<br>Liquid<br>mg/l |
|----------|---------------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Vitamins | Ascorbic Acid                               | 50-81-7                   | 0,0566                    | 0,0566                    | 0,0566                    | 0,0566                    | 0,0566                    | 0,0566                    |
|          | Choline Chloride                            | 67-48-1                   | 0,5                       | 0,5                       | 0,5                       | 0,5                       | 0,5                       | 0,5                       |
|          | DL-alpha-Tocopherol Phosphate Disodium Salt | 60934-46-5                | 0,01                      | 0,01                      | 0,01                      | 0,01                      | 0,01                      | 0,01                      |
|          | D-Biotin                                    | 58-85-5                   | 0,01                      | 0,01                      | 0,01                      | 0,01                      | 0,01                      | 0,01                      |
|          | D-Ca Pantothenate                           | 137-08-6                  | 0,01                      | 0,01                      | 0,01                      | 0,01                      | 0,01                      | 0,01                      |
|          | Ergocalciferol                              | 50-14-6                   | 0,1                       | 0,1                       | 0,1                       | 0,1                       | 0,1                       | 0,1                       |
|          | Folic Acid                                  | 59-30-3                   | 0,01                      | 0,01                      | 0,01                      | 0,01                      | 0,01                      | 0,01                      |
|          | Menadione Sodium Bisulfite                  | 130-37-0                  | 0,016                     | 0,016                     | 0,016                     | 0,016                     | 0,016                     | 0,016                     |
|          | Myo-Inositol                                | 87-89-8                   | 0,05                      | 0,05                      | 0,05                      | 0,05                      | 0,05                      | 0,05                      |
|          | Nicotinamide (Nicotinic acid amide)         | 98-92-0                   | 0,025                     | 0,025                     | 0,025                     | 0,025                     | 0,025                     | 0,025                     |
|          | Nicotinic Acid                              | 59-67-6                   | 0,025                     | 0,025                     | 0,025                     | 0,025                     | 0,025                     | 0,025                     |
|          | P-Aminobenzoic Acid (PABA)                  | 150-13-0                  | 0,05                      | 0,05                      | 0,05                      | 0,05                      | 0,05                      | 0,05                      |
|          | Pyridoxal Hydrochloride                     | 65-22-5                   | 0,025                     | 0,025                     | 0,025                     | 0,025                     | 0,025                     | 0,025                     |
|          | Pyridoxine Hydrochloride                    | 58-56-0                   | 0,025                     | 0,025                     | 0,025                     | 0,025                     | 0,025                     | 0,025                     |
|          | Riboflavin                                  | 83-88-5                   | 0,01                      | 0,01                      | 0,01                      | 0,01                      | 0,01                      | 0,01                      |
| O.C.*    | Thiamine Hydrochloride                      | 67-03-8                   | 0,01                      | 0,01                      | 0,01                      | 0,01                      | 0,01                      | 0,01                      |
|          | Vitamin A Acetate                           | 127-47-9                  | 0,14                      | 0,14                      | 0,14                      | 0,14                      | 0,14                      | 0,14                      |
|          | 2 Deoxy-D-Ribose                            | 533-67-5                  | 0,5                       | 0,5                       | 0,5                       | 0,5                       | 0,5                       | 0,5                       |
|          | Adenine Sulfate                             | 321-30-2                  | 10                        | 10                        | 10                        | 10                        | 10                        | 10                        |
|          | Adenosine 5'Monophosphate                   | 18422-05-4                | 0,2385                    | 0,2385                    | 0,2385                    | 0,2385                    | 0,2385                    | 0,2385                    |
|          | Adenosine-5-Triphosphate x 2Na              | 51963-61-2                | 1                         | 1                         | 1                         | 1                         | 1                         | 1                         |
|          | Cholesterol                                 | 57-88-5                   | 0,2                       | 0,2                       | 0,2                       | 0,2                       | 0,2                       | 0,2                       |
|          | D-Glucose Anhydrous                         | 50-99-7                   | 1000                      | 1000                      | 1000                      | 1000                      | 1000                      | 1000                      |
|          | D-Ribose                                    | 50-69-1                   | 0,5                       | 0,5                       | 0,5                       | 0,5                       | 0,5                       | 0,5                       |
|          | Guanine                                     | 73-40-5                   | 0,3                       | 0,3                       | 0,3                       | /                         | 0,3                       | /                         |
|          | Guanine + HCl                               | 635-39-2                  | /                         | /                         | /                         | 0,3                       | /                         | 0,3                       |
|          | Hepes Free Acid                             | 7365-45-9                 | /                         | /                         | /                         | /                         | 5958                      | 5958                      |
|          | Hypoxanthine                                | 68-94-0                   | 0,3                       | 0,3                       | 0,3                       | 0,3                       | 0,3                       | 0,3                       |
|          | L-Glutathione Reduced                       | 70-18-8                   | 0,05                      | 0,05                      | 0,05                      | 0,05                      | 0,05                      | 0,05                      |
|          | Phenol Red Sodium Salt                      | 34487-61-1                | 21,3                      | 21,3                      | 21,3                      | 21,3                      | 21,3                      | 21,3                      |
|          | Thymine                                     | 65-71-4                   | 0,3                       | 0,3                       | 0,3                       | 0,3                       | 0,3                       | 0,3                       |
|          | Tween 80                                    | 9005-65-6                 | 20                        | 20                        | 20                        | 20                        | 20                        | 20                        |
|          | Uracil                                      | 66-22-8                   | 0,3                       | 0,3                       | 0,3                       | 0,3                       | 0,3                       | 0,3                       |
|          | Xanthine + Na                               | 1196-43-6                 | 0,344                     | 0,344                     | 0,344                     | 0,344                     | 0,344                     | 0,344                     |

\* Other Components