

Product Information

Murashige and Skoog Salt Base

without agar

CATALOG NO. 56740C

Description

One of the most commonly used plant culture media, Murashige and Skoog Medium has proven effective in the culture of tissue derived from monocotyledons and dicotyledons. This medium, originally formulated to support tobacco callus, has been used to support callus initiation and growth, the growth of cells in suspension culture and the regeneration of shoots and plantlets from explants. Most recently, it has been used for micropropagation of ornamental, vegetable and fruit plants in research and commercial enterprises.

Murashige and Skoog Salt Base contains all the basal salts as prescribed by Murashige and Skoog's original formulation and is most commonly modified for use with specific plant culture applications.

Formulation

| Component (all components measured in mg/L) | |
|---|----------|
| INORGANIC SALTS | |
| Ammonium nitrate | 1650.000 |
| Calcium chloride anhydrous | 332.200 |
| Cobalt chloride hexahydrate | 0.025 |
| Cupric sulfate pentahydrate | 0.025 |
| EDTA ferric sodium salt | 36.700 |
| Magnesium sulfate anhydrous | 180.700 |
| Manganous sulfate monohydrate | 16.898 |
| Potassium iodide | 0.830 |
| Potassium nitrate | 1900.000 |
| Potassium phosphate monobasic anhydrous | 170.000 |
| Sodium molybdate dihydrate | 0.250 |
| Zinc sulfate heptahydrate | 8.600 |
| OTHER | |
| Boric acid | 6.200 |
| Grams of powder per liter | 4.302 |

Precautions

Use aseptic technique when handling or supplementing this medium after filtration. This product is for further manufacturing use. THIS PRODUCT IS NOT INTENDED FOR HUMAN OR THERAPEUTIC USE.

Storage

Store dry powder medium at 15 to 30 C. Do not use after the expiration date. Store hydrated medium protected from light at 15 to 30 C.

Indications of Deterioration

Dry powder should be free flowing. Do not use if powder is caked. Prepared medium should be clear of particulates and flocculent material. Do not use if liquid medium is cloudy or contains precipitate. Other evidence of deterioration may include color change or degradation of physical or performance characteristics.

Preparation Instructions

1. Measure 80 - 90% of the final volume of cell culture grade water (Catalog No. 59900C) into an appropriate size mixing vessel. Water temperature should be 15 to 30 C. Do not heat water.
2. Add the dry powder medium to the water. Rinse the original package with a small amount of cell culture grade water to remove all traces of powder and add to the solution. Mix until completely dissolved.
3. Heat stable supplements such as sucrose, agar and some vitamins can be added prior to autoclaving or added as sterile supplements to the sterilized solution. Storage conditions and shelf life of the supplemented product may be affected by the nature of the supplements.

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4. While stirring the solution, adjust the pH to 6.9 - 7.1 using NaOH 1N (Catalog No. 59223C) or HCl 1N. For most cells and culture conditions, the optimal pH of this salt solution after filtration is 7.0 - 7.4.
5. Add cell culture grade water to the solution in Step 4 to bring it to the final volume.
6. Dispense the prepared medium into autoclavable storage vessels and loosely attach the caps.
7. Sterilize the prepared medium in a validated autoclave at 121 C, 15 psi (1 kg/cm²) for 30 minutes on the liquid cycle, slow exhaust. Because of the variability of autoclaves and load configurations, it may be necessary to adjust the time required to effectively sterilize the medium. The appropriate time should be determined in each laboratory.
8. Sterile medium should be protected from light at 2 to 8 C.

NOTE: Dry powder medium is extremely hygroscopic and must be protected from atmospheric moisture. We recommend that the entire contents of each package be used immediately after opening. Preparing concentrated solutions for long-term storage is not recommended because some salts tend to form insoluble complexes in solutions more concentrated than 1X. Supplements can be added prior to membrane filtration or added as sterile supplements to the sterilized solution.

Characteristics

Appearance

Off-white free-flowing powder

Bioburden

≤ 100 CFU/100 mL

Endotoxin

≤ 1.0 EU/mL

Osmolality (as supplied)

65 - 105 mOsm/kg H₂O

pH (as supplied)

4.6 - 5.0

References

1. Murashige, T. and Skoog, F., *Physiologica Plantarum* (1962) 55:473.
2. Huang, L. C. and Murashige, T., *TCA Manual* (1976) 3(1):539

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