Bristol's Modified Medium

Introduction

Bristol's Modified Medium (BMM) is recommended as a growth medium for many fresh water algal cultures.

Materials

Calcium chloride, $CaCl_2 \cdot 2H_2O$, 1 g
Iron(III) chloride solution, 1%, < 1 mL
Magnesium sulfate, $MgSO_4 \cdot 7H_2O$, 3 g
Potassium phosphate, monobasic, KH_2PO_4, 3 g
Potassium phosphate, dibasic, K_2HPO_4, 3 g
Pringsheim's soil-water, 40 mL
Sodium chloride, NaCl, 1 g
Sodium nitrate, $NaNO_3$, 10 g
Water, distilled or deionized (DI)
Autoclave

Safety Precautions

Sodium nitrate is a strong oxidizer; avoid friction or shock—explosions have occurred; moderately toxic by ingestion. Iron(III) chloride is a skin and tissue irritant; corrosive; and slightly toxic by ingestion. Magnesium sulfate is an irritant to the eyes and the respiratory tract. Calcium chloride is slightly toxic. Wear chemical splash goggles, chemical-resistant gloves, and a chemical-resistant apron whenever working with chemicals, heat, or glassware. Wash hands thoroughly with soap and water before leaving the laboratory. Follow all laboratory safety guidelines. Please review current Material Safety Data Sheets for additional safety, handling, and disposal information.

Procedure

1. Dissolve each of the six salts (calcium chloride, magnesium sulfate, potassium phosphate monobasic, potassium phosphate dibasic, sodium chloride and sodium nitrate) in 400 mL of distilled or deionized water.
2. Measure 10 mL from each of the salt solutions made in step one and add to 900 mL of DI water.
3. Add one drop of 1% Iron(III) chloride solution and 40 mL of Pringsheim's Soil-Water (Flinn Publication No. 11020) and autoclave.

Disposal

Please consult your current *Flinn Scientific Catalog/Reference Manual* for general guidelines and specific procedures, and review all federal, state and local regulations that may apply, before proceeding. Calcium chloride, iron(III) chloride, magnesium sulfate, potassium phosphate, sodium chloride, and sodium nitrate may be disposed of according to Flinn Suggested Disposal Method #26a.

Tips

- Most algal cultures thrive in medium light, such as a north-facing window.
- Maintain cultures at 17–23 °C.
- Replenish with fresh media every two weeks. Subculture as needed to prevent overcrowding.
- Do not use iodized sodium chloride.

Publication No. 11019
061616

The materials needed to make *Bristol's Modified Medium* are available from Flinn Scientific, Inc.

Catalog No.	Description
C0018	Calcium chloride, 500 g
F0006	Iron(III) chloride, 100 g
M0018	Magnesium sulfate, 500 g
P0141	Potassium phosphate, monobasic, 100 g
P0142	Potassium phosphate, dibasic, 100 g
S0063	Sodium chloride, 500 g
S0090	Sodium nitrate, 500 g
FB1820	Bristol's Algae Medium, 100 × concentrate, 100 mL

Consult your *Flinn Scientific Catalog/Reference Manual* for current prices.