Knop's Solution

Introduction

Knop's solution is an ideal media for culturing *Oscillatoria*, *Oedogonium* and *Volvox*.

Materials

Calcium nitrate, $Ca(NO_3)_2$, 3 g
Magnesium sulfate, $MgSO_4$, 1 g
Potassium nitrate, KNO_3, 1 g
Potassium phosphate, dibasic, K_2HPO_4, 1 g
Sucrose, 50 g (optional)
Water, distilled or deionized (DI)
Balance, 1-g
Beaker, 1-L

Safety Precautions

Calcium nitrate is a strong oxidizer; a potential fire risk when in contact with organic material; and may explode when shocked or heated. Potassium nitrate is a strong oxidant; fire and explosion risk when heated or when in contact with organic material as well as a skin irritant. 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. Measure 1-L of distilled or deionized water into a 1-L beaker.
2. Mass 3 g of calcium nitrate. Add the calcium nitrate to the water.
3. Mass 1 g of each of the following chemicals—magnesium sulfate, potassium nitrate and potassium phosphate and add to the solution.
4. For immediate use add 5-L of DI water to the original stock solution. *Note:* This 1% solution may need to be shaken before use to mix undissolved salts.
5. Pour solution into desired containers and autoclave.
6. (Optional) Add 50 g of sucrose to 500 mL of Knop's solution to stimulate the formation of zoospores.

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. Any unused chemicals may be stored for future use. Excess prepared media may be disposed of down the drain with excess water according to Flinn Suggested Disposal Method #26b.

The materials needed to make *Knop's Solution* are available from Flinn Scientific, Inc.

Catalog No.	Description
C0350	Calcium Nitrate, 100 g
M0115	Magnesium Sulfate, 100 g
P0070	Potassium Nitrate, 100 g
P0142	Potassium Phosphate, dibasic, 100 g
K0003	Knop's Solution, 500 mL

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

Publication No. 11021
061616