

MUCOLYSE

I. INTENDED USE

Mucolyse is a sputum-liquefying agent used to digest and thin out the sputum, thus enhancing the isolation of organisms responsible for chronic lung disease.

II. SUMMARY AND EXPLANATION

Diagnosis and management of chronic lung disease has improved with the advent of sputum thinning agents. In the past iodides, Alevaire (Breon Laboratories, Inc. New York, N.Y.), and sodium salts, have clinically been used to help thin the thick bronchopulmonary secretions commonly associated with this disease, but with limited success. A significant contribution to the cause was made by Sheffner in 1963 when he demonstrated that the reactive sulfhydryl groups in n-acetylcysteine were mucolytic. Since then, Cleland has shown that the sulfhydryl reagent dithiothreitol is a superior reagent for the specific and total reduction of mucoprotein disulfide bonds. DTT as a liquefying agent is used routinely in the digestion of sputum prior to processing smears and cultures as it does not effect the morphology, growth or FA standing of the pathogens in the sputum.

III. DESCRIPTION

Dithiothreitol (DTT) and phosphate buffer in accurate quantities are lyophilized and provided in individually labeled vials. Each vial is sufficient to make 100 mL of final product. The resultant pH will be 7.0.

IV. PROCEDURE

1. To reconstitute each vial of Mucolyse, add, aseptically, 10 mL of sterile distilled water.
2. After closing the vial, gently agitate for complete reconstitution. The resultant solution should be clear and free from visible particulate matter.
3. To make working solution, aseptically add 5 mL of Mucolyse to a 50 mL conical tube.
4. Fill the conical tube up to the 50 mL mark with sterile distilled water.
5. Repeat this process with the remaining 5 mL of Mucolyse in a 2nd 50 mL conical tube. This is now the working solution.
6. Aliquot 3 mL of the working solution into the sterile 15 mL blue top conical tubes.
7. Label the tube, write the date that they were reconstituted on the label, and place the tubes in the -20°C freezer.

V. USE

1. Thaw the Mucolyse at room temperature before use.
2. Write the thaw date on the vial. Once thawed it is only good for 24 hours.
3. Overlay sputum samples with an equal volume of diluted Mucolyse in a centrifuge tube.
4. Vortex the sputum for 30 seconds.
5. Allow the mixture to stand at room temperature for 15 minutes.

VI. Reference

Package insert Pro-Lab Diagnostics 20 Mural Street, Unit #4 Richmond Hill Ont. L4B 1K3

Document Control

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Microbiology Director Approval: Dr. Ann Robinson 02/01/2006

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