K110 BETA LACTAMASE TEST
K112 BETA LACTAMASE POSITIVE CONTROL.

PRINCIPLE/DISCUSSION:
Production of the beta-lactamase enzyme by some bacteria makes them resistant to penicillin and cephalosporin antibiotics. (1) Not all penicillin resistant organisms produce beta-lactamase; the detection of the enzyme is primarily of value in the study of *Haemophilus influenzae, Neisseria gonorrhoeae* and *Staphylococcus*. KEY Beta-Lactamase Discs employ the acidometric test, based on the fact that beta-lactamase hydrolyses penicillin G with subsequent acidification of the medium. Acidification is shown by the change in the phenol red indicator from red to yellow.

ACTIVE INGREDIENTS:
Each disc contains 1000 units of penicillin G, dipotassium phosphate, and phenol red in a soluble form.

MATERIAL SAFETY DATA:
This product does not contain any materials known at this time to be hazardous.

QUALITY CONTROL:
For easier interpretation of tests and assurance of the correct performance of the test run positive and negative controls with each test. NOTE: See K112-Beta Lactamase Positive Control Disc information at the end of this insert. (sold separately). KEY Beta-Lactamase Tests are for invitro diagnostic use only. Discard used tests in a manner appropriate for biohazardous materials.

MATERIALS PROVIDED:
K110 Beta-Lactamase Test Discs and K112 Positive Control Discs are sold separately in bottles of 30 discs each.

MATERIALS REQUIRED:
KEY Beta-lactamase test requires fresh 24 hour growth. Consult the current edition of Manual of Clinical Microbiology or other reference source for desired media for specimen source. Other items required but not provided are: Small test tubes (e.g. 12 X 75 mm) Inoculation loops, Purified water, neutral pH

STORAGE:
Store discs tightly closed @ <0c..

PROCEDURE:
1.) Add 0.1 ml. purified water with a neutral pH (7.0-7.2) to a small glass test tube (e.g. 12 X 75 mm).
2.) Add 1 Beta-Lactamase test disc. The water should turn a yellow- orange to red-orange color.
3.) Inoculate with sufficient growth from a pure culture of the organism being tested to give a marked turbidity. Incubate at 32-32-37^{o}C.

INTERPRETATION:
Haemophilus and Neisseria cultures may be read within 60 seconds after incubation. Staphylococcus cultures should be read at 1 hour. **DO NOT INCUBATE LONGER THAN 1 HOUR**. A positive test indicating the presence of the beta-lactamase enzyme will turn a bright lemon yellow with no trace of red or orange.

LIMITATIONS:
KEY Beta-Lactamase Test is intended for use with pure bacterial cultures only, and cannot be used on body fluids such as urethral exudates.

K112-POSITIVE CONTROL DISCS

PRINCIPLE/DISCUSSION:
KEY Beta-Lactamase Positive Control Discs are impregnated with purified beta-lactamase in a stable form. When added to any Beta-lactamase test, the disc produces an immediate positive reaction eliminating the need to maintain positive control cultures.

ACTIVE INGREDIENTS:
Each disc contains penicillinase obtained from bacterial cultures.

MATERIAL SAFETY DATA:
These discs contain material which may be harmful if ingested in large quantities. If this occurs, contact a physician.

USE AND INTERPRETATION:
Add 1 positive control disc to any beta-lactamase test in lieu of a positive control organism. Interpret the reaction according to the directions provided by the manufacturer of the beta-lactamase test being used.

REFERENCES:
1.) Finegold, Sidney M., and Baron, Ellen Jo, 1986, Methods for Testing Antimicrobial Effectiveness, ed. 7, Bailey and Scott's Diagnostic Microbiology , C. V. Mosby, St. Louis, Mo.

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