



PRODUCT SPECIFICATION SHEET

Bacitracin (0.04 Units) (ID001)

Indented Use:

Bacitracin (0.04 Units) (ID001) is recommended for identification of *Streptococcus pyogenes*.

Principle :

Bacitracin Disks are used in the presumptive identification of group A β -hemolytic streptococci and allow for differentiation of group A β -hemolytic streptococci from other β -hemolytic streptococci. Bacitracin disc of 0.04 units inhibits the growth of Group A beta-haemolytic streptococci on blood agar. Micrococci and streptococci are also inhibited by 0.04 units disc, while all coagulase-negative staphylococci are resistant.⁽¹⁾ Bacitracin susceptibility test discs are filter paper discs impregnated with 0.04 units of Bacitracin. Bacitracin discs if used as a screening test before serological grouping can save considerable time, labour and materials. Maxted showed that Group A streptococci were more sensitive to Bacitracin than beta-haemolytic strains of other groups.⁽²⁾ Therefore, he suggested that Bacitracin might be used as a rapid diagnostic agent for Group A streptococci.

Levinson and Frank⁽³⁾ who employed Bacitracin impregnated filter paper discs for this purpose, observed that many sensitive beta-haemolytic streptococci were of Group A. Bacitracin disc were further compared by Steamer et al in fluorescent antibody technique and Lancefield precipitin technique and found that the Bacitracin disc technique was most convenient for routine clinical laboratory.⁽⁴⁾ Bacitracin sensitivity test along with Furacin and Optochin tests are useful for distinguishing *Aerococcus viridans* and *S. milleri* from enterococci and *Streptococcus mitis*.⁽³⁾

Composition :

(1 package contains 50 Disks.)

Sterile, 6mm diameter filter paper disks impregnated with 0.04 Units of Bacitracin.

Precautions :

1. For Invitro Diagnostic use only.
2. Observe approved biohazard precautions and aseptic techniques. Product to be used only by adequately trained and qualified laboratory personnel. All biohazard waste should be sterilized before disposal.
3. To achieve optimum results proper inoculum medium or culture incubation temperature and time is of utmost importance.
4. The disc required to consume during next 15 days should be placed in a refrigerator (2 - 8 °C).
5. The larger stock should be preserved at - 20°C to maintain potency.
6. Bring to be used to the room temperature one hour prior to avoid moisture condensation.
7. Control test using known culture should be preferably carried out at the intervals.
8. Use known Group A and non-Group A streptococci to determine the accuracy of the discs and inoculum.

Directions :

Pure Cultures :

1. Inoculate the surface of Tryptose Blood Agar Base (DM272) evenly with pure culture of beta-haemolytic streptococci to be tested.
2. Aseptically place a Bacitracin disc on the inoculated surface and incubate the inverted plate at 35-37°C for 18-24 hours in 10% CO₂.
3. Observe for the presence of zone of inhibition around the Bacitracin disc.





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Clinical Materials :

1. Incubate Tryptose Blood Agar Base (DM272) plate with throat swab or other material.
2. Spread the inoculums to obtain discrete colonies on some portion of the plate, so as to determine the species in mixed growth.
3. Aseptically place a Bacitracin disc on the secondary area of inoculation and incubate the inverted plates for 18-24 hours at 35-37°C in 10% CO₂. Examine for zones of inhibition.

Quality Control :

1. Filter paper discs of 6 mm diameter bearing letters "B" in continuous printing style.
2. Check for signs of deterioration.
3. At the time of use, check performance with pure cultures of stable control organisms producing known desired reactions as per the table below.
4. Quality control requirements must be performed in accordance with applicable local, state and/or federal regulations or accreditation requirements and your laboratory's standard Quality Control procedures. It is recommended that the user refer to pertinent NCCLS guidance and CLIA regulations for appropriate Quality Control practices.
5. Do not use product if the reactions with control organisms are incorrect.

Expected Cultural response:

Average diameter of zone of inhibition for *S.pyogenes* observed on Tryptose Blood Agar (DM272) after an incubation at 35-37°C for 18-24 hours.

Sr. No.	Organism	Results
		Zone of inhibition (mm)
1.	<i>Streptococcus pyogenes</i> ATCC 19615	15 -20 mm
2.	<i>Streptococcus agalactiae</i>	< 14 mm

Interpretation of Results :

1. A zone indicates that the *Streptococcus* is presumptively of Group A.
2. A zone of inhibition greater than or equal to 14 mm indicates susceptibility to bacitracin and is presumptive of group A streptococci. For further confirmation serological grouping can be performed.

Storage :

Store at 2 - 8°C. Use before expiry date on the label.

Limitation :

Bacitracin is inhibitory to many organisms except β -haemolytic streptococci, however the presence of a zone of inhibition does not essentially indicate Lancefield Group A streptococci. If the colonial morphology is carefully observed, it is possible to select presumptive Group A streptococci. It is recommended that biochemical and/or serological tests are performed on colonies from pure culture to confirm identification.

References :

1. Guthof O., 1960, Ztschr. F hyg. U. Infektionskr., 146:425.
2. Maxted W. R., 1953, J. Clin. Path., 6:234.





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3. Levinson M. L. and Frank P.F., 1955, J. Bact., 69:234.
4. Streamer C.W et al, 1962, Am. J. Dis. Children, 104:157.

Packaging

Product Name : Bacitracin (0.04 Units)

Product Code : ID001

Available Pack sizes : 1vial

Further Information

For further information please contact your local MICROMASTER Representative.



MICROMASTER LABORATORIES PRIVATE LIMITED

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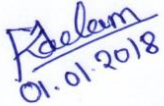
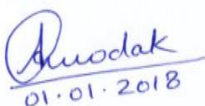

Unit 38/39, Kalpataru Industrial Estate,

Unit 38/39, Kalpataru Industrial Estate,

Off G.B. Road, Near 'R-Mall' , Thane (W) - 400607. M.S. INDIA.

Ph: +91-22-25895505, 4760, 4681. Cell: 9320126789.

Email: micromaster@micromasterlab.com

Prepared By	Checked By	Approved By
 01.01.2018	 01.01.2018	 01.01.2018
Microbiologist	Head Quality Control	Head Quality Assurance

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