

Bacitracin 0.04 Units

Recommended for the identification and differentiation of Group A streptococci (especially *Streptococcus pyogenes*) from other β -haemolytic streptococci.

REF: BS.1/NZ01.100.0100
REF: BS.1/NZ01.500.0500

100 Gram
500 Gram

REF: BS.1/NZ01.250.0250

250 Gram

PRINCIPLE AND INTERPERTATION

The growth of Group A β -haemolytic streptococci on blood agar is inhibited by 0.04 units Bacitracin disc. 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 can save considerable time, labour and materials if used as a screening test before serological grouping. Maxted showed that Group A streptococci were more sensitive to Bacitracin than β -haemolytic strains of other groups (2). Hence 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 β -haemolytic streptococci were of Group A. Steamer et al compared Bacitracin disc, 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).

MEDIA COMPOSITION

Item	UNITS
Bacitracin	0.04 Units

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Respect country requirement for waste disposal.

S56: dispose of this material and its container at hazardous or special waste collection point.

S57: use appropriate container to avoid environmental contamination.

S61: avoid release in environment.

For further information, refer to the Bacitracin 0.04 Units material safety data sheet.

STORAGE AND STABILITY

BioScien Bacitracin 0.04 Units Store at 2-8°C. Use before expiry date on the label. d within stated expiry period. Use before expiry date on the label. Product performance is best if used within stated expiry period.

PREPARATION

Pure Cultures : Evenly inoculate the surface of Tryptose Blood Agar Base (M097) with pure culture of β -haemolytic streptococci to be tested. 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. Observe for the presence of zone of inhibition around the Bacitracin disc. A zone indicates that the *Streptococcus* is presumptively of Group A. If desired further confirmation can be obtained by serological grouping. **Clinical Materials :** Inoculate Tryptose Blood Agar Base (M097) plate with throat swab or other material. Spread the inoculum to obtain discrete colonies on some portion of the plate, so as to determine the species in mixed growth. 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. 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. By serological grouping, further confirmation can be obtained.

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile petri dishes
- Incubator
- Autoclave

PERFORMANCE CHARACTERISTICS

Appearance: Filter paper discs of 6 mm diameter bearing letters "B" in continuous printing style. **Cultural response:** Average diameter of zone of inhibition for *S.pyogenes* observed on Tryptose Blood Agar (M097) after an incubation at 35-37°C for 18-24 hours.

Organism	Zone of inhibition (mm)
<i>Streptococcus pyogenes</i> ATCC 19615	15 -20 mm

Key : (*) Corresponding WDCM numbers.

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control still out of range please contact **BioScien** technical support.

REFERENCE

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

SYMBOLS IN PRODUCT LABELLING			
	For in-vitro diagnostic use		Number of <n> test in the pack
	Batch Code/Lot number		Caution
	Catalogue Number		Do not use if package is damaged
	Temperature Limitation		Consult Instruction for use
	Expiration Date		
	Manufactured by		