

Edwards Medium Base

Recommended for selective and rapid isolation of *Streptococcus agalactiae* and other Streptococci associated with bovine mastitis.

REF: BS.1/ED01.100.0100	100 Gram	REF: BS.1/ED01.250.0250	250 Gram
REF: BS.1/ED01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE ⁽¹⁾

Streptococci are gram-positive facultatively anaerobic bacteria, which constitute normal commensal flora of mouth, skin, intestine and upper respiratory tract of humans. Group B Streptococci are an important cause of systemic infections in infants and occasionally of bacterial endocarditis (1). Mastitis is a disease of cattle caused by the organisms *Streptococcus agalactiae*. It belongs to the Lancefield group B Streptococci.

METHOD PRINCIPLE ⁽²⁻³⁾

Peptone and Beef extract serve as sources of carbon, nitrogen and other essential nutrients. Esculin helps to differentiate esculin-positive (group D Streptococci) organisms from esculin-negative (*S. agalactiae*) organisms. Sodium chloride helps to maintain the osmotic equilibrium of the medium. Crystal violet and thallos sulphate serve as the selective agents for Streptococci. Supplementation with blood provides additional nutrients in addition to serving as an indicator of haemolysis. *Mastitis Streptococci* show alpha, beta or gamma type of haemolysis. Esculin differentiates esculin-positive group D Streptococci (black colonies) from esculin-negative *Streptococcus agalactiae* (blue to colourless colonies). Centrifuged test milk sample is directly inoculated on the surface of the medium plate. Esculin-negative (blue to colourless) *S. agalactiae* organisms are further subcultured for identification tests.

MEDIA COMPOSITION

Item	Formula per liter of medium
- Peptone	10.00 gm
- Beef extract	10.00 gm
- Esculin	1.00 gm
- Sodium chloride	5.00 gm
- Crystal violet	0.0013 gm
- Thallos sulphate	0.330 gm
- Agar	15.00 gm

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 Edwards Medium Base material safety data sheet.

STORAGE AND STABILITY ⁽²⁾

BioScien Edwards Medium Base are stable until expiration date stated on label when properly stored 10-30°C. The prepared medium should be stored at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period. **Final pH 7.4 ± 0.2 at 25°C**

MEDIA PREPARATION

41.33 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at Δ 115°C for 20 minutes. Cool to 45-50°C and aseptically add 5 to 7% v/v sterile sheep blood. Mix well and pour into sterile Petri plates.

Deterioration

The color of **BioScien** Edwards Medium Base is Cream to yellow homogeneous free flowing powder. If there are any physical changes, discard the medium.

Basal medium: Amber coloured, clear to slightly opalescent gel. After addition of 5-7% v/v sterile defibrinated sheep blood: Cherry red coloured opaque gel forms in Petri plates, media should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), and contaminations.

SPECIMEN COLLECTION AND PRESERVATION ⁽¹⁻³⁾

Clinical samples - faeces, vaginal swabs, ; Dairy samples.

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile cups
- Sterile petri-dishes
- Incubator

PERFORMANCE CHARACTERISTICS

Cultural characteristics observed with added 5-7%v/v sterile defibrinated sheep blood after an incubation at 35-37°C for 24-48 hours











Organism	Growth	Colour of Colony
<i>Enterococcus faecalis</i> ATCC 29212	good - luxuriant	greyish blue
<i>Streptococcus agalactiae</i> ATCC 13813	good - luxuriant	greyish blue to colourless w/ haemolysis
<i>Escherichia coli</i> ATCC 25922	inhibited	
<i>Staphylococcus aureus</i> <i>subsp. aureus</i> ATCC 25923	inhibited	

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact **BioScien** technical support.

REFERENCES

1. Cruickshank R., Duguid J. P., Marmion B. P., Swain R. H. A., (Eds.), 1975, Medical Microbiology, The Practice of Medical Microbiology, 12th Edition, Vol. II, Churchill Livingstone.
2. Haxsthausen H., 1927, Ann. Derm. Suph., 8.201.
3. Bryan C. S., 1932, Am. J. Public Health, 22. 749.
4. Edwards S. J., 1933, J. Comp. Path. Therap., 46:211-217.
5. McKenzie D. A., 1941, Vet. Rec., 53:473-480.
6. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
7. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
8. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
9. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

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	