# BILE ESCULIN AGAR

## INTENDED USE

Bile Esculin Agar is used to differentiate enterococci and the *Streptococcus bovis* group from other streptococci.[1,2]

## SUMMARY AND EXPLANATION

Rochaix noted the value of esculin hydrolysis in the identification of enterococci.[3] The enterococci were able to split esculin, but other streptococci could not. Meyer and Schonfeld incorporated bile into the esculin medium and showed that 61 of 62 enterococci were able to grow and split esculin, whereas the other streptococci could not.[4] Swan used an esculin medium containing 40% bile salts and reported that a positive reaction on the bile esculin medium correlated with a serological group D precipitin reaction.[5]

## PRINCIPLE

Enterococci and certain streptococci hydrolyze the glycoside esculin to esculetin and dextrose. Esculetin reacts with an iron salt to form a dark brown or black complex.[6] Ferric citrate is incorporated into the medium as an indicator of esculin hydrolysis and resulting esculetin formation. Oxgall is used to inhibit gram-positive bacteria other than enterococci.

## REAGENTS (FORMULA)

| | | |
|---|---|---|
| Pancreatic Digest of Gelatin ..... | 5.0 | g |
| Beef Extract ..... | 3.0 | g |
| Oxgall ..... | 20.0 | g |
| Ferric Citrate ..... | 0.5 | g |
| Esculin ..... | 1.0 | g |
| Agar ..... | 14.0 | g |
| Deionized Water ..... | 1000.0 | ml |

## PROCEDURE

Inoculate the medium with two or three colonies and incubate overnight at 35 ± 2°C in an aerobic atmosphere.

## EXPECTED RESULTS

Any blackening of the plated medium indicates a positive result; if no blackening occurs, the test is negative.

For slants, if more than half of the slant is blackened within 24-48 hours, the test is positive; if less than half is blackened or no blackening occurs within 24-48 hours, the test is negative.

## QUALITY CONTROL

All lot numbers have been tested and have been found to be acceptable. Customers can test products using the following quality control organisms. Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, sample results should not be reported.

| Organisms | Incubation | Results |
|---|---|---|
| *Enterococcus faecalis* ATCC 29212 | 35 ± 2°C for 42-48 hours | Growth, Blackening |

ATCC® is a registered trademark of American Type Culture Collection.

## BIBLIOGRAPHY

1. Ruoff, Whiley and Beighton. 1999. In Murray, Baron, Pfaller, Tenover and Yolken (ed.), Manual of clinical microbiology, 7th ed. American Society for Microbiology, Washington, D.C.

2. Facklam, Sahm and Teixeira. 1999. In Murray, Baron, Pfaller, Tenover and Yolken (ed.), Manual of clinical microbiology, 7th ed. American Society for Microbiology, Washington, D.C.

3. Rochaix. 1924. Comt. Rend. Soc. Biol. 90:771.

4. Meyer and Schonfeld. 1926. Zentralbl. Bakeriol. Parasitenk. Infectionskr. Hyg. Abt. Orig. 99:402.

5. Swan. 1954. J. Clin. Pathol. 7:160.

6. MacFaddin. 2000. Biochemical tests for identification of medical bacteria, 3rd ed., Lippincott Williams & Wilkins, Baltimore, Md.

Viikinkaari 6, 00790 Helsinki Room 306A5

Phone: +358 (45) 8016507 Email: info@abbadis-life.com Website: https://abbadis-life.com