

Bile Esculin Azide Agar

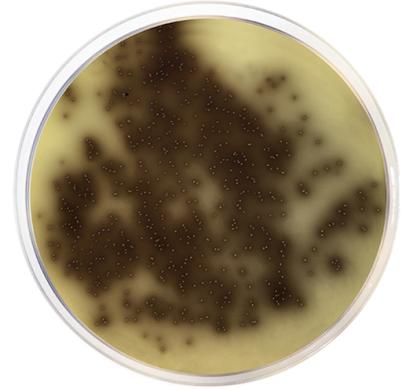
Cat. 1372

Selective medium recommended for the isolation and presumptive identification of intestinal enterococci

Practical information

Applications	Categories
Selective isolation	Enterococci

Industry: Water / Food



Principles and uses

Bile Esculin Azide Agar is a selective medium for the differentiation, isolation and presumptive identification of enterococci.

The ability to hydrolyze esculin is a characteristic of enterococci. Organisms positive for esculin hydrolysis, hydrolyze the glycoside esculin to esculetin and dextrose. The esculetin reacts with the Ferric ammonium citrate to form a dark brown or black colony. Ox bile does not inhibit enterococci while other Gram positive bacteria are inhibited. Sodium azide inhibits Gram negative bacteria. Tryptone, peptone and yeast extract supply the nutrients essential for growth. Sodium chloride provides the osmotic balance. Bacteriological agar is the solidifying agent.

The presence of intestinal enterococci, is an indicator for faecal contamination, especially when the contamination occurred a long before and the less resistant coliform bacteria, including *Escherichia coli*, may already be dead when the analysis is carried out.

Formula in g/L

Bacteriological agar	13,5	Esculin	1
Ferric ammonium citrate	0,5	Ox Bile	10
Peptone	3	Sodium azide	0,25
Sodium chloride	5	Sodium citrate	1
Tryptone	17	Yeast extract	5

Preparation

Suspend 56,25 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Dispense into appropriate containers and sterilize in autoclave at 121°C for 15 minutes. Overheating can cause darkening of the medium. If tubes are used, allow cooling in a slanted position.

Instructions for use

- Incubate at 35°C ± 2°C and observe after 18-24 hours.
- It is considered that the typical colonies that show a brown-black color in the surrounding medium give positive reactions and are recounted as intestinal enterococci.

Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
------------	------------	--------------------------------	------------------------------	-----------------

Microbiological test

Incubation conditions: (35±2 °C / 18-24 h)

Microorganisms	Specification	Characteristic reaction
Enterococcus faecium ATCC 19434	Good growth	Esculin (+)
Streptococcus pyogenes ATCC 19615	Inhibited growth	Esculin (-)
Escherichia coli ATCC 25922	Inhibited growth	Esculin (-)
Enterococcus faecalis ATCC 29212	Good growth	Esculin (+)

Storage

Temp. Min.:2 °C

Temp. Max.:25 °C

Bibliography

FACKLAM, R.R.: Recognition of group D streptococcal species of human origin by biochemical and physiological test. – Appl. Microbiol., 23; 1131-1139 (1972)

FACKLAM, R.R.: Comparison of several laboratory media for presumptive identification of enterococci and group D streptococci. – Appl. Microbiol., 26; 138-145 (1973)

SWAN, A.: The use of bile-esculin medium and of Maxted's technique of LANCEFIELD grouping in the identification of enterococci. (Group D streptococci)

J. Clin. Pathol., 7: 160-163 (1954)