

TM 036 -BILE ESCULIN AGAR (ISO 10273:1994)

INTENDED USE

For isolation & identification of *Yersinia enterocolitica* from food and animal feeding products.

PRODUCT SUMMARY AND EXPLANATION

Bile Esculin Agar is recommended for the isolation and identification of *Y. enterocolitica*, as per ISO 10273-1994. Bile Esculin Agar containing 4% bile salts was formulated by Swan and modified by Facklam and Moody. Bile Esculin Agar is ideal for the isolation and differentiation of intestinal *enterococci*, based on esculin hydrolysis in the presence of bile. Bile Esculin Agar is also recommended by APHA for identification of Group D Streptococci as the *enterococci* were able to split esculin, but other *streptococci* could not.

COMPOSITION

Ingredients	Gms / Ltr
Bile salts	40.000
Agar	15.000
Peptone	5.000
Beef extract	3.000
Esculin	1.000
Ferric citrate	0.500

PRINCIPLE

The medium contains peptone and beef extract that serve as source of carbon, nitrogen and essential growth factors. Bile Salts do not inhibit enterococci while other Gram-positive bacteria are inhibited. Organisms that hydrolyze esculin, produce esculetin which reacts with ferric citrate to form a dark brown or black complex. Ferric citrate acts as an indicator of esculin hydrolysis. Bacteriological agar is the solidifying agent.

INSTRUCTION FOR USE

- Dissolve 64.5 grams in 1000ml distilled water.
- Gently heat to boiling with gentle swirling to dissolve the medium completely.
- Dispense into tubes or flasks.
- Sterilize by autoclaving at 15 psi (121°C) for 15 minutes.
- Allow the tubed medium to solidify in a slanted position with a butt of 2.5cm deep or pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Dehydrated powder	:	Light yellow to brownish yellow, homogeneous free flowing powder
Appearance of Prepared medium	:	Amber colored, clear to slightly opalescent gel with bluish tinge
pH (at 25°C)	:	6.6± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Esculin hydrolysis	Incubation Temperature	Incubation Period
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<i>Enterococcus faecalis</i>	29212	50-100	Good-Luxuriant	>=50%	+	35-37°C	18 – 24 Hours
<i>Enterococcus faecium</i>	27273	50-100	Good-Luxuriant	>=50%	+	35-37°C	18 – 24 Hours
<i>Yersinia enterocolitica</i>	27729	50-100	Good-Luxuriant	>=50%	+	35-37°C	18 – 24 Hours
<i>Escherichia coli</i>	25922	50-100	Fair-Good	40-50%	-	35-37°C	18 – 24 Hours
<i>Streptococcus pyogenes</i>	19615	≥1000	None- Poor	0-10%	-	35-37°C	18 – 24 Hours

+ = Positive Reaction, blackening of medium

- = Negative reaction, No blackening of medium

PACKAGING

In 100 & 500 gm packaging size.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°C and protect from direct Sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.










Product Deterioration: Do not use, if powder show evidence of microbial contamination, discoloration, drying, or other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. International Organization for Standardization (ISO), 1994, Draft ISO /DIS 10273.
2. Swan, A. 1954. The use of bile-esculin medium and of Mated's technique of Lancefield grouping in the identification of enterococci (group D streptococci). J. Clin. Pathol. 7:160.
3. Facklam, R. R., and M. D. Moody. 1970. Presumptive identification of group D streptococci: the bile-esculin test. Appl. Microbiol. 20:245
4. MacFaddin J.F., 1980, Biochemical Tests for Identification of Medical Bacteria, 2nd Ed., Williams and Wilkins, Baltimore.
5. Downes F. P. and Ito K., 2001, Compendium of Methods for the Microbiological Examination of Foods. 4th Ed., APHA, Washington

 GMP Good Manufacturing Practices Certified	 Best Before	 QTY. Quantity	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 LOT/ B. NO. Lot / Batch Number	 Consults Instructions for Use	 QR Code	

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

Revision: 8th July 2020