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BILE ESCULIN AGAR (ISO 10273:1994) TM 036

INTENDED USE

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

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

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. The enterococci were able to split esculin, but other streptococci could not.

PRINCIPLE

Peptic digest of animal tissue and beef extract serve as source of carbon, nitrogen and essential growth factors. Bile Salts do not inhibit enterococci while other Gram positive bacteria are inhibited. Organisms hydrolyze esculin to esculetin and dextrose. Esculetin further reacts with ferric citrate to form a dark brown or black complex. Ferric citrate is incorporated into the medium as an indicator of esculin hydrolysis and resulting esculetin formation. Bacteriological agar is the solidifying agent.

INSTRUCTION FOR USE

1. Dissolve 64.5 gms in 1000 ml distilled water.
2. Gently heat to dissolve the medium completely.
3. Dispense the medium in tubes or flasks and sterilize by autoclaving at 15 psi (121°C) for 15 minutes.
4. 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 Powder: Light yellow to brownish yellow colour, homogeneous free flowing powder
Appearance of prepared medium: Amber colour, clear to slightly opalescent gel with bluish tinge.

pH (at 25°C) : 6.6 ± 0.2

INTERPRETATION:

Culture characteristics observed after incubation period of 18 - 24 hours at 35 ± 2°C.
*Recovery for the growth of microorganism on Soya Casein Digest Agar (TM 345) is considered to be 100%.

Microorganisms	ATCC	*Inoculum (CFU)	Esculin Hydrolysis	Standard recovery (%)
Enterococcus faecalis	29212	50-100	Positive reaction, blackening of medium	≥ 50%
Enterococcus faecium	27273	50-100	Positive reaction, blackening of medium	≥ 50%
Yersinia enterocolitica	27729	50-100	Positive reaction, blackening of medium	≥ 50%
Escherichia coli	25922	50-100	Negative reaction	40 - 50%
Streptococcus pyogenes	19615	≥ 1000	Negative reaction	None to poor

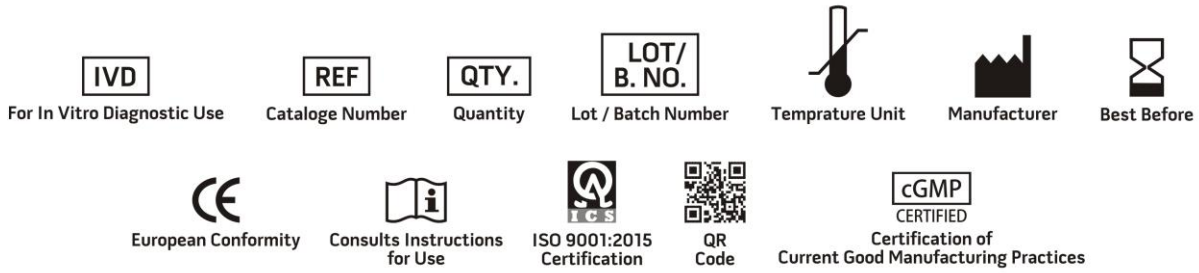
STORAGE & STABILITY

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.

REFERENCES

1. International Organization for Standardization (ISO), 1994, Draft ISO /DIS 10273.
2. Swan, A. 1954.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.
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.



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