48300 Bile Esculin Agar (B.E. Agar)

For the preliminary identification of enterococci and streptococci (serology group D) from food and pharmaceutical products, as defined by Swan (1954) and Facklam and Moody (1970).

Composition:

Ingredients	Grams/Litre
Meat Extract	3.0
Meat Peptone	5.0
Ox-bile	40.0
Ferric Citrate	0.5
Esculin	1.0
Agar	15.0

Final pH 6.6 ± 0.2 (at 25 °C)

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Appearance:	Faint yellow, faint beige, faint brown coloured, homogeneous, free flowing powder.
Gelling:	Firm
Color and Clarity:	Light yellow, light bown-yellow, light brown coloured, clear to slightly turbid gel forms in petri plates.

Directions:
Dissolve 64.5 g in 1 litre distilled water. Bring to a boil while stirring continually. This medium should NOT be autoclaved. Cool to 45-50º C. Mix gently and dispense into sterile Petri dishes.

Principle and Interpretation:
Bile Esculine Agar was formulated by Swan (1) for the isolation and identification of group D streptococci from food. The most gram positives are inhibited by oxgall. Enterococci and streptococci hydrolyse esculin to esculetin and dextrose, which reacts with ferric citrate producing a brownish black precipitate around the colonies. Originally Bile Esculin Test was used for identification of enterococci (2). But it was found that this test is also shared by group D streptococci (3) and therefore it is recommended that other tests such as salt tolerance be performed while identifying enterococci (4). Similarly this medium was also shown to aid differentiation of enterobacteriaceae general (5) on the basis of esculin hydrolysis.

Cultural characteristics after 18-24 hours at 35ºC.

Organisms (ATCC)	Blackening	Growth
Enterococcus faecalis (29212)	+	luxuriant
Streptococcus pyrogenes (19615)	-	luxuriant
Proteus mirabilis (25933)	-	none to poor

References:
1. Swan, J. Clin. Pathol . 7, 160 (1954)
2. MacFaddin J.F., 1985, Media for Isolation-Cultivation-Identification-Maintainance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore
3. R. Flackman, Appl. Microbiol. 23, 1131 (1972)
4. R. Flackman, Appl. Microbiol. 26, 138 (1973)
5. Edberg S.C., Pittman S., and Singer J.M., 1977, J. Clin. Microbiol., 6:111
6. R. Flackman, M.D. Moody, Appl. Microbiol. 20, 245 (1970)

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.