

LAURYL SULFATE BROTH MUG IDF FORMULATION

For the enumeration of *E. coli* and coliforms
with fluorogenic MPN method, in milk and milk products.

Typical formula (g/l)

Tryptose	20.00
Lactose	5.00
MUG	0.10
Sodium Chloride	5.00
Dipotassium Hydrogen Phosphate	2.75
Potassium Dihydrogen Phosphate	2.75
L-Tryptophan	1.00
Sodium Laurylsulfate	0.10

Directions

Suspend 36.7g in 1000ml of cold distilled water. Heat until complete dissolution and distribute 10 ml into test tubes. Autoclave at 121°C for 15 minutes. Where necessary prepare a double strength medium.

Final pH 6.8 ± 0.2

Description

Lauryl Sulphate Broth MUG IDF Formulation (LSB MUG) is a modification of Lauryl Sulfate Broth, for the detection of *E. coli* with fluorogenic MPN method, in milk and dairy products according to Standard IDF 140:1994. The presence of sodium lauryl sulfate makes the medium selective for; the differentiation of *E. coli* given by the presence of MUG (4-methylumbelliferil β D-glucuronide) which allows the detection of the β-glucuronidase enzyme. MUG is hydrolysed among enteric bacteria by *E. coli* and by few other strains of *Salmonella* and *Shigella*. Such hydrolyses occurs by release of 4-methylumbelliferone, fluorescent under a Wood's Lamp. The tryptophan contained in the medium allows to perform the indole test directly on the tubes with the addition of Kovacs Reagent, for the *E. coli* confirmation.

Technique

1. Prepare the test sample and the further dilutions according to Standard IDF 122B:1992
2. Take double and single strength medium tubes
3. Transfer 10ml of the test sample if liquid or 10ml of the primary dilution in case of solid sample, in tubes with double strength medium
4. Transfer 1ml of the test sample if liquid or 1ml of the primary dilution in case of solid sample, in tubes with single strength medium
5. For each of the further dilutions proceed in the same way
6. Carefully mix the inoculum with the medium
7. Incubate the tubes at 30°C for 24 ± 2 hours
8. If neither gas formation nor opacity is observed, incubate for up to 48 ± 2 hours
9. Perform the confirmatory test for *E. coli*: add to each tube 0,5 ml of NaOH 0.1M and observe for fluorescence under a Woods Lamp; add to each tube 0.5 ml of Kovacs Reagent (cat. n° 19171000) and observe for the formation of a purple ring.
10. Identify those tubes which develop fluorescence and are positive to indole test as *E. coli*
11. Identify those tubes which show gas production as coliforms
12. For each dilution count the number of positive tubes and refer to MPN table to determine the MPN of microorganisms.

User quality assurance (37°C-24 h)

Productivity control

E.coli ATCC 25922: growth, gas production, fluorescent under Wood's lamp

Specificity control

C.freundii ATCC 43864: growth, gas production, and not fluorescent under a Wood's lamp

Selectivity control

E.faecalis ATCC 19433: partially inhibited, no gas production

Storage

Dehydrated medium: 2-8 °C

User prepared tubes: 1 month at 2-8 °C

Reference

- IDF 170L (1994) Milk and Milk products. Enumeration of presumptive *E.coli*.

Packaging

401580F1	Lauryl Sulfate Broth MUG IDF Formulation	100 g (2.7 l)
401580F2	Lauryl Sulfate Broth MUG IDF Formulation	500 g (13.6 l)