

Lactose Sulfite Broth, LS (i23651)

for the determination of H₂S production by *Clostridium perfringens* according to ISO 7937 standard.

Industry: Food

Principles & Uses

A specialized medium, Lactose Sulfite Broth Base, serves as a crucial tool in detecting and confirming the presence of *Clostridium perfringens*, a significant contributor to food poisoning and gastrointestinal diseases. This medium is recommended by ISO 7937 for its selectivity in promoting the growth of *Clostridium* while inhibiting other microbes. The nutrient-rich base, including tryptone and yeast extract, provides essential growth components, while lactose acts as a fermentable carbohydrate. Sodium chloride maintains osmotic balance, and cysteine hydrochloride serves as a reducing agent. The medium's efficacy lies in its ability to showcase the characteristic blackening of medium due to the reaction of hydrogen sulfide with sodium bisulfite and ferric ammonium citrate.

Gas production during fermentation is trapped in inverted Durham tubes, providing a visible indicator. This medium, formulated according to European Pharmacopoeia standards. Its selectivity and distinctive indicators make it a robust method for confirming the presence of *C. perfringens*.

Composition (gr/L)

Tryptone 5 g, Yeast Extract 2.5 g, Lactose 10 g, Sodium Chloride 2.5 g, L-Cysteine 0.3 g.

Also, to be added after autoclave: Sodium metabisulfite 0.7 g, Ferric Ammonium Citrate 0.62 g.

Final pH at 25°C 7.1 ± 0.2

Preparation from dehydrated Powder

Suspend 20.3 g of the powder in 1 L of distilled water. Mix Thoroughly and Adjust pH to 7.1. Dispense in test tubes containing inverted Durham's tubes. Autoclave at 121°C for 15 minutes. Cool to 45-50°C and add filter sterilized solution of 1.2% Sodium metabisulfite, 0.5 ml, and 1.0% Ferric Ammonium Citrate, 0.5 ml, to each tube.

Quality Control

Dehydrated Appearance: Cream powder, free-flowing and homogeneous.

Prepared Appearance: Amber solution, limpid.

Reaction of 2.0% Solution at 25°C: pH 7.1 ± 0.2

Cultural Response

Typical culture response after 24 hours of incubation at 46°C (qualitative method).

Organism (ATCC*)	Growth	Gas	H ₂ S
<i>Clostridium perfringens</i> (13124)	Good	+	+
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<i>Clostridium sporogenes</i> (19404)	Good	+	-

*ATCC is a registered trade mark of the American Type Culture Collection.



Prepared culture media (right). *Clostridium perfringens* (left)

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.